The **future** of **interactive** entertainment

**UK** edition **July** 1994 £three ¥2100 $ten

# EDGE

**Sony ■ Sega ■ Nintendo ■ 3DO ■ Amiga ■ PC ■ Atari ■ SNK ■ Arcade ■ NEC ■ CD-i**

# 3DOA?

This is the man who's selling the 3DO dream. Now it's reality.

**Why is he still smiling?**

Issue **ten**

**10**

Voted **Magazine of the year**

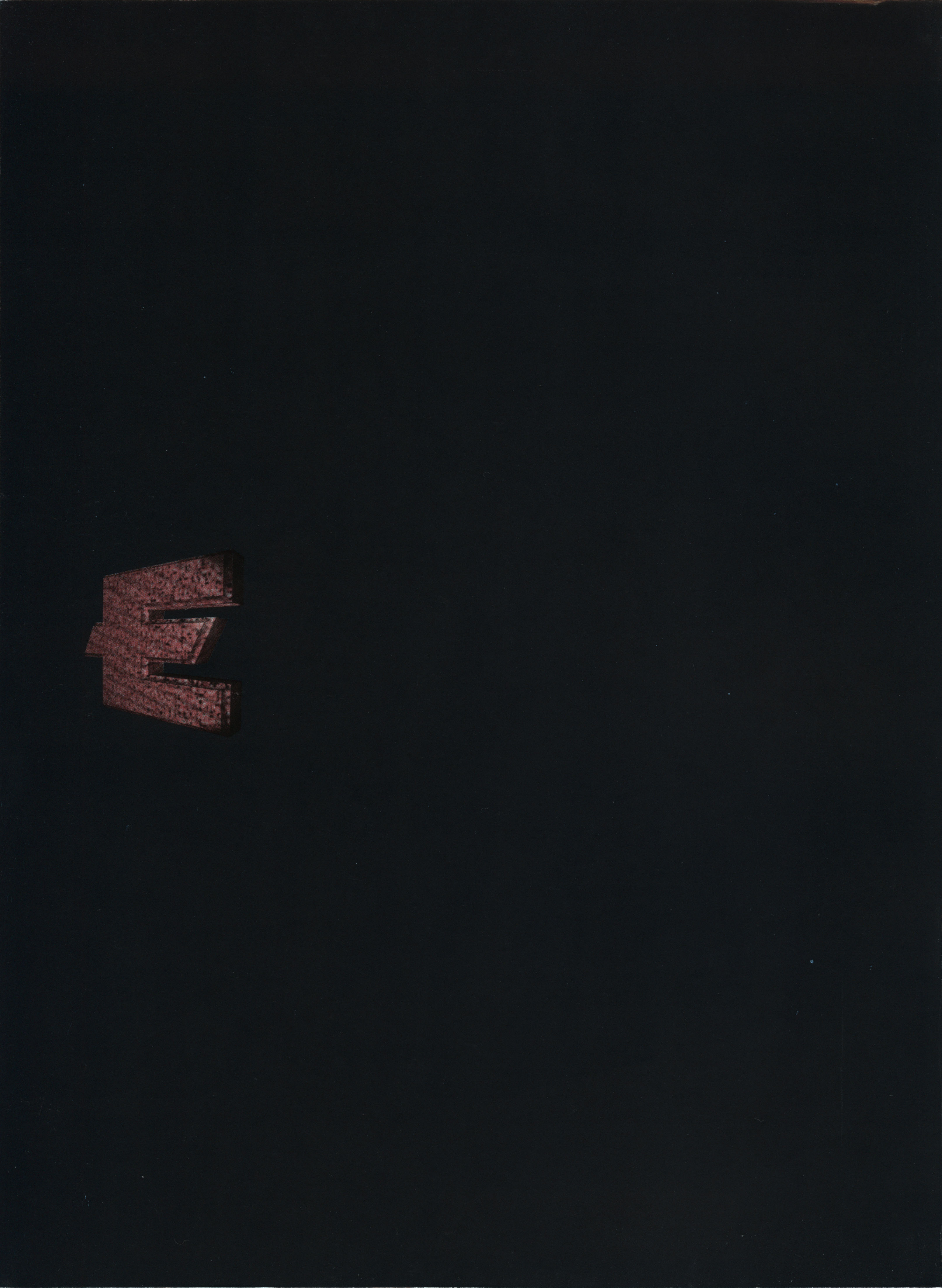


Industry awards

**'People have criticised us all along…' For a man who dismissed consoles as a passing fad, 3DO CEO Trip Hawkins has a lot to prove. Edge puts him on the spot and asks: Is it all over before it's even started?**

07

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## Videogames of the future – more than just kids' stuff?

The videogame market is changing fast. In late 92 the media took the videogame out of the closet and flogged it to death. The result? A market that's come crashing down to land in an ungainly heap.

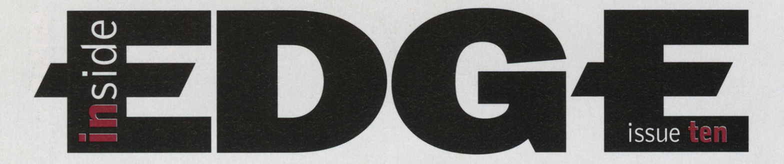
But with Sonic and Mario as its only cultural attachés, is it really any wonder? If there was a saturation point, we passed it about 12 months ago with this kind of stuff. The acceptance of the videogame as a cultural phenomenon also coincided with the biggest stagnation in creativity this market has ever seen. Another regurgitated version of Sonic might seem harmless enough, but in the end it's the mainstream consumer that's getting disillusioned. And no-one can blame them.

Now, banish all preconceptions of the videogame as we know it, and suspend reality for a second. Imagine walking past your local Dixons and seeing a big monitor displaying a Formula One racing game so realistic, that it stops not only motor racing fans in their tracks, but non-videogame players. No longer is your imagination required to do half the work. It looks almost real. It's exciting. No fluffy rabbits, no evil Robotnik, just seductive realism.

It's inevitable that as technology speeds along its natural course, more realistic environments will throw open the interactive entertainment market to wider audiences. The quicker people will be able to relate to something, the quicker they'll want to get involved. Technology will never seduce the masses on its own; but realism will. And when it happens that's when the videogame will finally enter the realms of popular acceptance.

Until then, there's always the prospect of *Hyper Super Street Fighter II Turbo Special Champion Edition…*

## The **future** is almost here…







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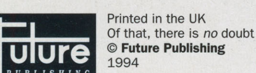
### Cover

**Photography,** © Chris Springmann, San Francisco, California, USA
**Cover Image,** Trip Hawkins, CEO of The 3DO Company









# insideview

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## News

This month: Nintendo announce the launch of a new 32bit VR games system – that doesn't need glasses; Commodore go into liquidation pending takeover bid; Argonaut talk about their new PC 3D rendering card; inside Sega's new development headquarters in London; and **Edge** explores La Vague Interactive (left) – a magazine on a CD which is making waves in France and could be soon hit these shores

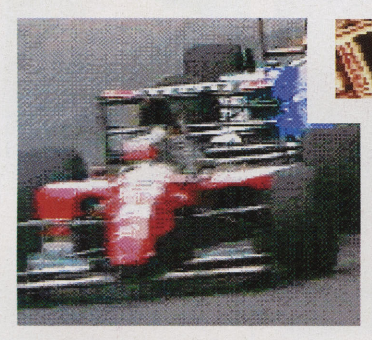
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## Prescreen

More up-and-coming visual succulence in the shape of Millennium's *Incoming* (left) and Origin's *BioForge* (right), plus Dave Perry's new 16bit game





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## Testscreen

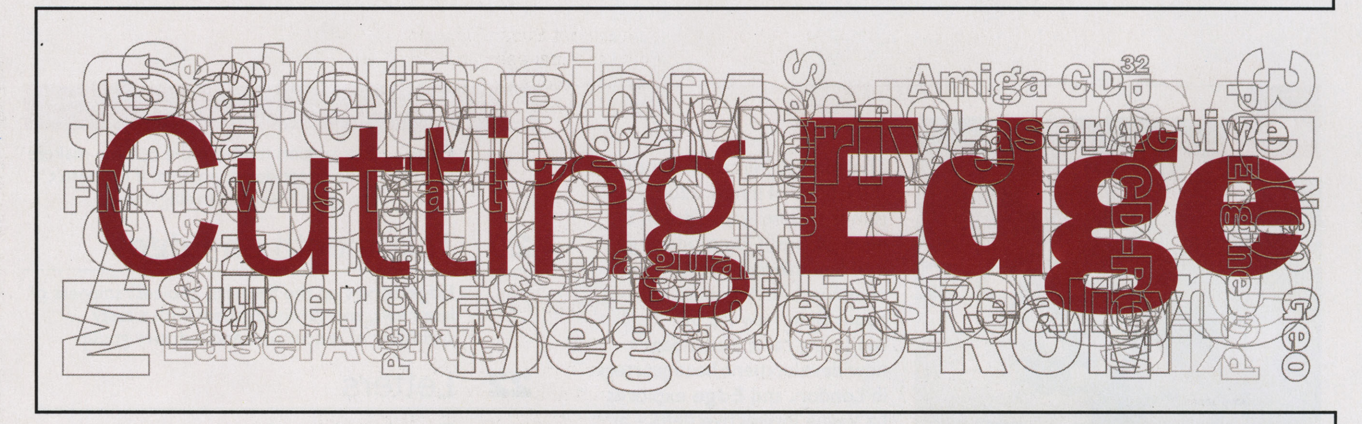
Another mixed bag of emotions ranging from intense disappointment (*Heavenly Symphony*, right) to esoteric appeal (*SOS*, left)

## Jeff **Minter**

Veteran Atari coder, author of *Tempest 2000* and ungulate-lover **Jeff Minter** talks to **Edge** about gameplay, Jaguars, Pink Floyd, psychedelic light synthesisers – and his deep-seated love of sheep, llamas and camels. Weird, man…

92

Photography: Jude Edginton



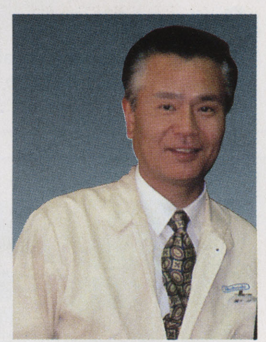

The very latest **news** from across the entire world of videogaming

# Nintendo: **32bit** machine for **'95**

**The Japanese giant prepares a 'strategic product' to follow the Famicom and Super Famicom**

Nintendo



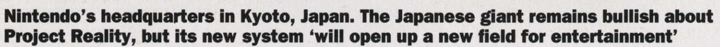


**Nintendo's hardware supremo Gumpei Yokoi, inventor of the Game Boy**

**Nintendo's headquarters in Kyoto, Japan. The Japanese giant remains bullish about Project Reality, but its new system 'will open up a new field for entertainment'**

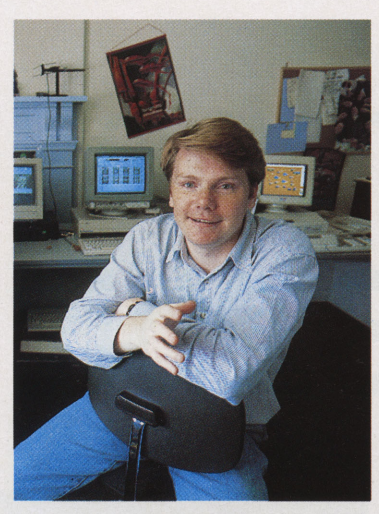
Nintendo like surprises, and a press release issued from their Kyoto headquarters in mid April packed one that few could have predicted. According to the release a 32bit dedicated virtual reality games machine will debut in the spring of next year. Not to be confused with Project Reality, this new system is already in its final stages of development and is set to make an appearance at the 'Shinsakku Soft no Tenjikai' or 'New Software Exhibition' taking place in the middle of November this year.

The most unusual feature of this new machine is that it will enable the player to experience the sensation of virtual reality without using a →



**'Nintendo has a commitment to gameplay that we haven't seen from any other publisher'**

Dave Jones, DMA Design



**Dave Jones, DMA design: 'We've gone with Nintendo because it's a very good deal and a very good system'**







**Project Reality development at NCL: the first three games will be versions of *Metroid* (top), *F-Zero* (middle) and *Zelda***

conventional television screen or head mounted display (HMD). Quite how Nintendo hope to do this is the centre of the whole mystery – Nintendo Japan are refusing to comment any further, with President Hiroshi Yamauchi offering simply, 'We're going to open up a new field for entertainment.'

The only real clue is that Nintendo are collaborating with an unnamed US company for the picture display hardware and virtual reality software. **Edge** has heard this unnamed company already has dealings with Project Reality partner, Silicon Graphics.

Priced at a fiercely competitive ¥20,000 (£125), the system is rumoured to be based around the NEC V810 or V820 chip.One popular rumour floating around is that the system has a built in laptop or Apple Newton-style screen. However, some form of projection technology is a possibility that's not being ruled out.

Whatever the case, '2D Virtual Reality' is a phrase the Japanese have been known to coin from time to time. And already, sceptics are claiming this is an stop-gap product rather than a product to carry Nintendo through the next generation.

Some insiders even claim it was set to be scrapped before a counter-attack was needed to fight Sega and Sony. A low cost VR system is unlikely to interfere directly with Sega or Sony's plans, but Nintendo's philosophy has always been to look towards new and exciting developments.

Of course, the horrible delays and costing problems that the big 'N' is allegedly experiencing with Project Reality might be another factor that's spurred this announcement.

Nintendo claim that new VR software for the system will cost less than current Super Famicom software. With the Japanese games market proving fiercer than ever, software pricing is likely to become an issue on which the new battles will be fought.

Just how good this machine will be and what exactly it will mean for gamesplayers isn't clear, but at least it confirms suspicions that Nintendo were 'up to something' all along.

## Meanwhile

work continues on Nintendo's real assault on the videogame market – Project Reality. It's this system, and not their VR system, that will become the successor to both the NES and SNES and a potential rival to Saturn and PS-X. Following on from news last month about Rare's *Killer Instinct* game, Nintendo have just announced the cooperation of respected Scottish development team DMA Design – the guys behind *Lemmings* and *Walker.*

DMA founder, David Jones comments: 'I have had the advantage of viewing the early stages of virtually every next generation game machine being developed in the world, and there is no question that Project Reality is in a class by itself. Nintendo has a commitment to gameplay that we haven't seen from any other publisher.'

Whether DMA will be developing for the arcade version of Project Reality is unclear, but it's unlikely they'll need reminding that their only involvement in this area – a version of *Lemmings* from Data East – bombed without trace.

Nintendo's Project Reality, will first be shown on an invitation-only basis at this Summer's CES in Chicago with their arcade game hardware debuting behind the scenes at this year's JAMMA show in August.

After a long period of silence and apparent inactivity, the Nintendo games machine seems to be back on the rails again. Let's hope it stays that way for the foreseeable future.



**Nintendo's USA Chairman Howard Lincoln: 'The key is DMA Design (above) evaluated all the technologies and chose ours as the best'**

### What is it?

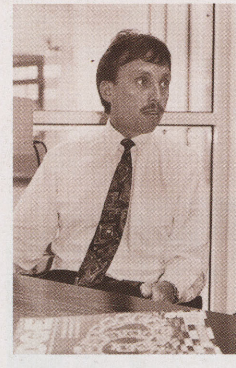
**It takes place between 26th-30th October at Earls Court, London. It features all the latest developments in the world of multimedia and videogaming. Computer and console enthusiasts will kick themselves if they miss it...**

# Sega Europe lead with 32bit

**Sega's UK development HQ is getting an early start on Mars and Saturn. Edge checked it out...**

**it is...**

**Future Entertainment '94 – the definitive home computing and interactive entertainment show. Whether it's PC, Mac, Amiga, or any of the new range of super consoles, it'll all be here in October**



**Mike Brogan, director of all new product development at Sega Europe...**

As part of Sega's worldwide expansion plans, Tokyo have invested £7.5 million in the latest venture in the UK. The new London development headquarters, in Gunnersbury Avenue, Chiswick, is now open for business.

It all started about two years ago when Sega decided that they wanted to start serious development in Europe – or so claims **Mike Brogan**, director of product development at Sega Europe.

'Previously, most of the development has been in Japan and the US; but the plan here is now to set up a core development team just for Mars and Saturn – this will be the first development in Europe for these two formats', Mike told **Edge.**

The new site is relatively empty at this early stage, but the company is currently recruiting around 30 staff who will be working on the very first Mars and Saturn development systems to arrive in the country.

'I've got over 40 Mars systems on their way from Japan,' claims Mike, 'and about 50 Saturn systems will be arriving in mid June – some of these will be going to third parties over here.'

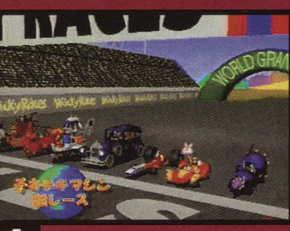
Despite the strategically delayed launch of Saturn in the US and UK, attention is still focusing on the development of software for the system alongside work for Mars – the name for the 32bit stopgap booster for the Mega Drive which is due around Christmas this year. The new headquarters will be delivering the first European games for ➔



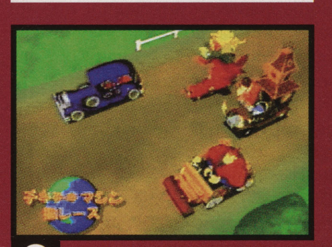
**Mars and Saturn development is starting at Sega's new HQ in West London**

## Attract mode

**It's that time of the month again where we take a closer look at one of better game intros that surfaced in this issue. These brilliantly rendered visuals fully capturing the humourous exploits of those *Wacky Racers*, 3DO style. So take a front row seat, sit back, and enjoy the race...**



**1** **The competitors line up as the race starter begins his commentary. Dick Dastardly and his faithful companion Mutley, manage to join the race as late entrants. Ready, steady, go!**



**2** **And they're off... The cars bump and jostle for position as they approach the first bend. Everything seems to be going very well and everyone seems to be playing fair. Until...**



**3** **A dragon sticks his head out of the rear window of a car, but he's not about to say hello. He's about to let loose with his fire breath and turn that car into a smouldering heap.**




The Mars adaptor will also work with the Mega CD, but as Sega admits, this will not be any easy combination to develop for...

← both systems. As revealed in **Edge** 8, Mars – or the Mega Drive 32 as it'll also be known – will fit on top of the machine rather like a large Power Base Converter and will cost about £150.

As far as aesthetics go, 'It'll be a bit like having a miniature Mega Drive 2 sitting on top,' admits Mike. But the beauty of the system is that the Mars adaptor will work with the Mega CD, too. A combination that Mike admits 'will be a little bit tricky to develop for'.

Since the Mars announcement was made earlier this year, expectations have obviously mounted for this £150 add-on. Previously, in-cart chips such as the Super FX and SVP processors have boosted 16bit performance, but Mars includes an entire new chipset to seriously boost the performance of the Mega Drive.

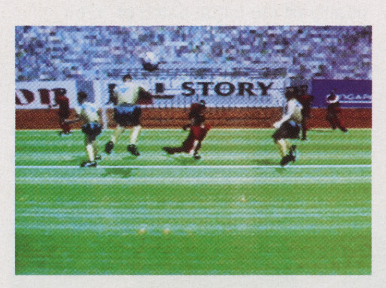
According to Mike: 'For polygon graphics you're going to get excellent performance with Mars. Not as quite as good as Saturn of course, but clearly in that league.

'The idea of Mars was really an extension to the SVP chip in *Virtua Racing*. Originally, the idea of having a separate SVP adaptor was considered. But when the guys in Japan looked into how it could be improved, they discovered that there was a lot more that could be done.'

Mars has been clearly built to a price, though. While Saturn includes a total of seven independent processors, Mars has just three. The system contains the same CPUs as Saturn – two Hitachi 32bit SH2 RISC chips, but also contains a custom video display processor (VDP) which acts as a frame buffer and helps with texture-mapping.

So far Sega have announced that we'll be seeing versions of *Virtua Racing Deluxe* and *Virtua Fighters* on Mars, but as reported in **Edge** 8, a Mars version of the Saturn's 3D soccer game is also on its way.

'There's no doubt that '*Virtua Racing Deluxe*' on Mars will be stunning title,' claims Mike, 'it'll knock spots off the SVP version.'



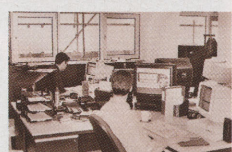

Saturn's soccer game – there's also a version planned for the Mega Drive 32

**But is** the system really going to deliver that arcade look and feel? Can a £150 bolt-on deliver the performance of say, Sega's Model 1 *Virtua Racing* board? Mike again, 'I can't say you'll get an arcade perfect conversion, but it'll certainly be getting there.'

Unlike Saturn, Mars has no proprietory polygon rendering hardware – the SH2s are effectively pure workhorse chips. But if the Tokyo development is anything to go by, Mars

Continued

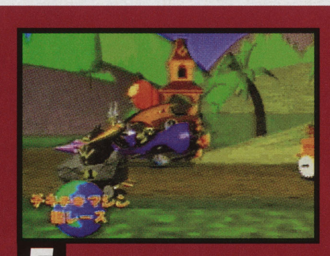




The Sega office is not yet fully occupied – soon it'll be crammed with developers...



**4** The dragon car's not the only one using dirty tricks. This incredibly slow tank decides it can do with some extra speed. Without warning, it fires a blast from its cannon.



**5** Dick Dastardly realises he's losing the race and decides to makes a last ditch attempt to win. He ignites his turbo and flies through the field, sending those near him spinning.



**6** The Wacky Racers re-enter the stadium as the race reaches its conclusion. The cavemen, the only one's that didn't use any cheap tricks, cross the finish line in first place...



**7** ...Much to Dick Dastardly's disgust. His sidekick Mutley can't help but laughing as DD rants and raves; Mutley obviously doesn't know what Dick has planned for him...

Continued

gives justifiably impressive results. Each SH2 delivers 23 MIPS of performance, so having 46 MIPS suddenly bolted onto the humble 68000 means a considerable leap – something like the performance of DX2/66 PC, in fact, for just £150.

According to Mike; 'With Mars the intention is to sell a low cost approximation of Saturn to compete in the price bracket currently occupied by the Jaguar.'

As a rough indication, Sega claim that the performance of Mars will compare 'extremely favourably' with Atari's Jaguar. Despite having less colours – 256 onscreen as opposed to 16.7 million – it's currently cheaper than Atari's machine and has the advantage of a Sega's massive worldwide installed base of 15 million owners to play with.

Sega plan to have two teams on internal development at first – one on Mars, one for Saturn. 'We've pretty much got what we want in most areas,' reckons Mike, ' but we're still on the look out for programmers – particularly 3D specialists – as well as graphic artists and a musician.'



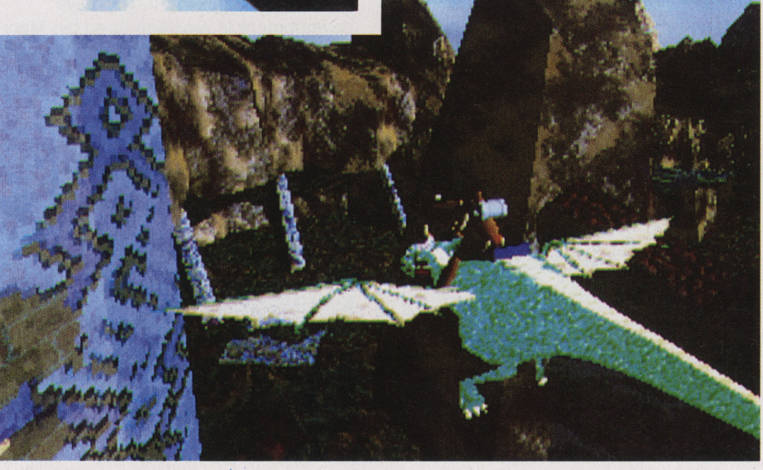

**The Saturn mock-up is long way from the finished unit. 50 development systems are coming**

**With development** systems now in place, the division faces the unenviable task of getting a Mars game out of the door in time for the launch of the system, as well as creating a Saturn game in an equally challenging timescale. But with Sega Japan also converting titles such as *Daytona GP*, *Virtua Racing* and *Virtua Fighters*, the quality of the initial batch of 32bit Mega Drive titles seems assured.

On June 21st Sega will be holding a development conference in London. For more information on this or any of the vacancies at Sega, contact Mike Brogan on (☎ 081 995 3399).




**Sega Japan will be handling the *Daytona GP* conversion for Mars...**



**This view of the stunning *3D shooting game* was one of the first screenshots released by Sega Japan to herald its planned 32bit launches, and it's caused quite a stir already...**

# Jaguar gets booted up

**Soon PC owners will be playing Jaguar games on their PC. But aren't PC games are better than Jaguar games?**




'Anything you can do, we can do' seems to be Atari Corporation's way of thinking these days. After the recent announcement of the PC Card that will allow you to run 3DO software from your PC, Atari have just announced that it has exclusively licensed its Jaguar technology to Sigma Designs to deliver a similar PC Card incorporating both the Jaguar technology and Sigma's own Reel-Magic full motion capabilities.

This seems a bit of a desperate move by Atari, who's Jaguar hasn't pounced as impressively as they'd first hoped. And Sigma's Reel-Magic card is also guilty of the same crime. Released in October last year, the Reel-Magic card has yet to become an essential part of the PC's make-up. And the biggest problem is that there doesn't seem to be enough software using the Reel-Magic card to make it a worthwhile investment; perhaps this explains the urgency of the hardware merger.

Atari president, Sam Tramiel, emphasised this: 'Knowing there would be great demand for Jaguar on personal computers, we designed the system to talk easily to the leading computer architectures. This has allowed us to move quickly to partner with Sigma Designs to make this happen before Christmas this year.'

This deal will obviously expand the Jaguar's user base – there are already 10 million PC users – but that's only if enough PC owners buy the new card.

Julien Nguyen, vice president Sigma Designs reckons, 'Jaguar's 64-bit technology will be extremely attractive to the MPC customer base of more than 10 million users. By combining Sigma's Moving Picture Experts Group (MPEG) technology with Atari's 3D animation, we look forward to bringing the hottest video game technology and software titles to the desktops of users worldwide.'

Sigma's Jaguar Reel-Magic card will be available around the same time that Atari plan releasing the official Jaguar CD-ROM unit later this year. No definite price has yet been set, but it would be surprising if this new board will sell for less than the current Reel-Magic card price of £400.

The cynically-inclined might suggest that all this is a bit pointless. Especially when the Jaguar's future is counting so highly on the conversion of quality PC games like *Doom* and *Alone in the Dark*. What can the Jaguar give the PC in return? It'll need more than *Crescent Galaxy*... E

## Where is...

**This place hosts the world's biggest summer show for videogames and electrical goods. This summer, Sony and Nintendo will be showing off their new systems behind close doors. You might want to hold onto your hats, though...**

## BUZZ words

**power pc**
pentium i don't think so **power pc** mate that's what you want stick **power** infront of any old crappy word like pc and you're laughin' these **power pc** things right can run pc stuff on macs or mac stuff on pcs depending on what you've got...
anyway this **power** word is bloody great i mean just find any old crappy word and stick it infront like **power metro** you've got yourself one cool fast motor mate
**power washin' up** won't take five mins
**power shite-beer** you'll get shitfaced for a couple o' quid
Just think, it'll be even better with *good* words... hmm... **power wonderbra** she'll have a wazzer pair...

# BRender: Argonaut PC booster

**Argonaut have come up with a fast new PC development tool. Edge reports...**

**it is...**

**'The windy city', Chicago. Here the interactive entertainment giants meet up for the Summer CES held between June 23rd-25th. Rumour has it that Nintendo intends unveiling some special stuff on SNES. Cor, eh?**

Argonaut Software, designers of the Super FX chip for Nintendo, has announced the release of a realtime 3D graphics rendering system which, it claims, brings workstation-quality performance to the PC.

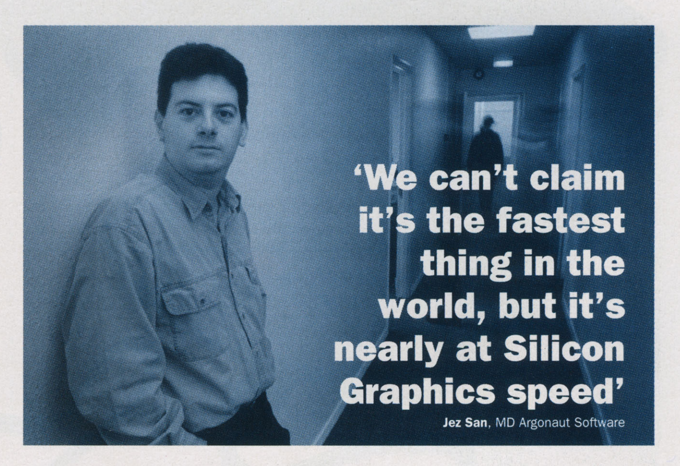
BRender (standing for Blazing Render) is a complete system with an applications interface, graphics libraries and device drivers. Using it, a programmer can produce realtime 3D rendering, including Gouraud shading, specular highlights, texture mapping and transparency on a standard PC without any hardware acceleration.

Argonaut claims the system can render 65,000 polygons per second at a resolution of 320 x 200 on a 66MHz 486, and over 80,000 polygons per second on a 60MHz Pentium machine.

**Jez San**, managing director of Argonaut, believes BRender will revolutionise the 3D game. 'Recently in **Edge,** Digital Image Design claimed its 3D system in *TFX* could move 22,000 polygons per second. Ours can manage over 65,000, so in this example it's three times as fast. Obviously this ratio changes according to the application. We can't claim it's the fastest thing in the world, but it's nearly at Silicon Graphics speed.'

BRender effectively provides a ready-made 3D programming package which developers can license, allowing them to concentrate more on the content and design of the 3D rather than the programming behind it.

It works by using a scene description based on something called an 'actor'. The encompassing 'world' actor has 'children', which are used to define the objects in the scene, be they polygons, cameras or lights. The actors are defined as a set of triangles arranged in a mesh to form polygons. They can initially be modelled with standard programs such as Autodesk's *3D Studio* and then imported.




Because these actors can be arranged in a hierarchical order, linked objects are possible. For example, a camera object can be linked to the front of a car object in a driving game, together with two light objects fixed to the headlamps. Moving just the one object – the car – automatically moves both the camera (providing a driver's eye view) and the lights.

In the same way, a model of the human body could be made to walk simply by moving the legs. As if that wasn't enough each actor has built-in collision detection rules which can define the object's behaviour when it hits another.

BRender's Application Programmers Interface (API) can be accessed at a number of different levels. Fairly simple →

**Hardware development partners, Cirrus Logic, are best known for VGA boards**

# Data stream

Sega's marketing budget for 1993: **£65 million**
Number of Mega Drives sold in the US in 1993: **5,900,000**
Sales of Atari's Jaguar in just two US cities – New York and San Francisco – before Christmas: **27,000**
Increase in sales of Electronic Arts' games in Japan from 1993-1994: **140%**
Predicted total number of videogame carts to be sold in the US in 1994: **112,000,000**
Electronic Arts' global sales figure year ending March 1993: **$298.4**
Electronic Arts' global sales figure year ending March 1994: **$418.3**
Amount UK business Pearson paid for US entertainment software firm, The Software Toolworks: **£310 million**
Estimated cost to industry of software piracy per year: **$1,640 million**
Drop in sales felt by Nintendo Germany during 1993: **15%** (Dropping from Dm800 million (£320m) to around Dm680 million (£275m))
The Rhino Group – holding company for the Future Zone retail chain – turnover for 1992: **£2.03 million**
Rhino Group Turnover for 1993: **£21.7 million**
Total amount Anco spent advertising *Kick Off 3* in the UK: **£200,000**
Total amount spent on marketing *Mortal Kombat* in the UK: **£2.2 million**
Activision's profit in 1992: **$118,000**
Activision's profit in 1993: **$483,000**
Worldwide unit sales of Philips' CD-i at the end of 1993: **300,000**
Sega's forecasted hardware sales for Hungary this year: **30,000-50,000**

scenes which require only the movement of lights, cameras or objects are handled automatically by the 3D library, but for more impressive effects, the API enables access to primitives at the object and polygon rendering level, including 2D primitives.

This means complex rotation, sprite scaling and deformation effects are available in realtime, without the need to pre-generate the necessary shapes.

This capability is the key to BRender's power. Most 3D systems in use on the PC rely on a huge library of predefined shapes for the game or application in question. In general, these are fixed and can't change shape, leading to the blocky, unrealistic look typical of a 3D game.

Realtime deformation effects give programmers the ability to produce fluid, organic movement in objects, which until now were confined to prerendered sequences.

These effects are already possible on machines such as the 3DO and the Jaguar, but rely on expensive and platform-dependent custom chips. Because BRender is designed to be totally portable, a game written with it on the PC could very easily be ported to the 3DO, Saturn, FM Towns, or any number of forthcoming set top boxes.

For this reason Jez is sure the system will soon become the standard for 3D developers: 'As game developers, we know the problems of writing for many different platforms. If each version has to be totally programmed from scratch, more money has to be allocated for the conversion so there's less for the game. With BRender the porting process should only take a couple of weeks.'

## These specs

are impressive, but there's more to come. Argonaut is currently in the process of developing a hardware accelerator chip with Cirrus Logic, known for its low-cost VGA chipsets. The XLR8R 1, as it's snappily known, should be available towards the end of the year, and provides a four to six-fold increase in polygon rendering performance running on a 66MHz 486.

In fact the speed of the host machine is irrelevant, because the chip itself is doing all the work; a 25MHz 386 should give the same performance. The process is entirely transparent; any software written using BRender automatically detects the presence of the accelerator and adjusts itself accordingly.

'Cirrus Logic is the biggest VGA company in the world – it owns 50% of the market,' Jez reckons. 'Everyone's done *Windows* accelerators to death, so the next big thing is 3D acceleration. The forthcoming card is designed to be a new version of the Diamond Speedstar, with a price tag of around $250. But BRender also supports other types of accelerator card, and the deal we've done with Cirrus is non-exclusive, so others should be appearing soon.'



**'We believe that with this system, even the guy in the street is capable of creating a decent game'**

Argonaut is keen to point out that unlike other 3D accelerators currently under development, its own chip accelerates every aspect of the 3D display, including the complex maths required to calculate a realtime scene. Other chips simply accelerate the pixel rendering process – the final output – leaving the time-consuming maths to the host processor. The power of the accelerator is such that Argonaut believes it's perfectly possible to display fully texture-mapped shaded scenes in true colour.

As these accelerators become available, Argonaut plans to enhance the system even further, with additions for fog effects, depth-cueing, anti-aliasing and covered light sources such as spotlights.

'We want BRender to be inexpensive with no barriers,' explains Jez. 'The developers of most licensed 3D systems expect a heavy payment. We're licensing it for much less because we're prepared to take the risk – after all, if the product is successful so are we. We believe that with this system, even the guy in the street is capable of creating a decent game.'

For more details on licensing BRender, contact Jez San or Rich Clucas at Argonaut on 081 200 5777.

**Complex rotation, sprite scaling and deformation effects are available in realtime – this capability is the key to BRender's power...**

**Jez San**, MD Argonaut Software

# Commodore up for grabs

**Commodore go into limbo while a buyer is found: could this the end of the big C?**

**Colin Proudfoot – joint managing director of Commodore UK**

After months teetering on the brink, Commodore's entire future was in the balance at press time as holding company Commodore International Ltd (CIL) filed for voluntary liquidation, development company Commodore Electronics Ltd (CEL) was dissolved and manufacturing of all machines at Commodore's plant in the Philippines ceased.

The firm's UK division valiantly insisted that it is business as usual and even declared that the latest developments were 'extremely encouraging' and that a positive outcome could be resolved 'in a matter of weeks'.

The 'positive outcome' is the settlement of a deal with an as yet unnamed investor (rumoured to be either Sony or Samsung) which is negotiating with Commodore with a view to taking over its business.

For the moment Commodore International, which is registered in the Bahamas, is still being run by the existing management team but they are now answerable to a team of trustees and the Bahamian courts which are looking after the interests of creditors.

Commodore UK's joint MD **Colin Proudfoot** explained to Edge that the move into the protection of trustees has been made as a precautionary measure while negotiations are at a delicate stage.

'If we had carried on as normal, all it would have taken is for one creditor to get wind of a possible purchase. They would then assume a large amount of money is about to be injected and could decide that they'll just make sure they get what they're owed by being the first to file a lawsuit. Others would then undoubtedly do the same and suddenly Commodore isn't an attractive proposition anymore.'

Whilst it is in the hands of trustees, no lawsuit can be filed against Commodore International.

**The crucial** question of the future of Commodore's flagship machines, the A1200 and CD$^{32}$, remain unanswered. At the moment, Commodore UK has supplies of both machines and will continue to service the UK trade. Neither machine, however, is currently being produced.

Nevertheless, Proudfoot insisted that Commodore has enough stock in reserve to keep product flowing through until a purchase is completed and a new owner gives the green light to continued production – and more development work on the new machine.

He offered: 'I'm extremely confident of a very solid future for the Amiga. I think that continuity will be maintained and I'm sure of the support of software publishers and retailers. End users have absolutely nothing to worry about.'

With around 1.5 million Amiga's sold in the UK over the last seven years and many still in active use, a continued supply of some software, mostly from independent publishers with low overheads, does seem relatively assured (despite the piracy that has always dogged the machine).

But if the rights to the machine are not picked up and manufacturing never →

**The fate of the Amiga line hangs in the balance while negotiations take place between Commodore and a potential buyer**

## The price of failure

**Commodore's recent financial performance has been abysmal. Sales of the Amiga and (to a lesser extent) the CD$^{32}$ have always been pretty strong in the UK, but neither machine has ever made a dent in the most important market in the world, the US.**

**The days of the late '80s/early '90s when the Amiga was the most sought after games machine in Europe were over once the Mega Drive and SNES arrived; and it's standing as a crossover option has been eroded by the PC and new, low cost Apple Macs.**

**This has been reflected in an alarming decrease in turnover and an even more alarming turnaround from respectable profits to spectacular losses.**

| Year | Turnover | Profit |
|---|---|---|
| 1988 | $871.1 | $55.8 |
| 1989 | $ 939.7 | $51.3 |
| 1990 | $887.3 | $1.5 |
| 1991 | $1,047.2 | $ 57.4 |
| 1992 | $911 | $27.6 |
| 1993 | $590.8 | ($356.5) |

**Brackets indicate loss.**

**So far, Commodore has failed to make a profit or show increased turnover in any quarter of 1994.**

**Note: All figures refer to Commodore's financial years ending June 30th of the calendar year shown.**

recommences then the market becomes stagnant. The machine that naturally fall into disuse would not be replaced by new owners and more and more publishers would consider dropping the format.

It's a pessimistic view, and one that could well be avoided. The future of the CD32 does, however, seem grim. It was launched to complete indifference in the States earlier this year and its disappearance from the market would not even be noticed.

It enjoyed moderate success in the UK, but isolated sales blips are not enough to elicit the long term software support of publishers like Electronic Arts, Acclaim and Sony who all run their business according to global maps and plans.

**With limited sales in Europe and no US or Japanese interest, the CD32 is on thin ice**

If someone does take over the rights to the product, it will find it very tough to successfully re-introduce it to a US market that didn't want it first time around.

Over the last six months, CD32 has looked less and less likely to compete with offerings such as Saturn and PS-X and now there is proof, if proof were needed, that Commodore is in no condition to compete corporately with firms such as Sega and Sony.

It's possible that any potential purchaser would look to snap up the remnants of the firm for a bargain price and squeeze one more good Christmas out of the Amiga and (possibly) CD32 in the UK. Or perhaps Commodore's development division has one more ace up its sleeve that has attracted interest from purchasers willing to bring investment to the firm.

Proudfoot outlined his ideal outcome: 'The whole thing will be resolved within days. There is fresh investment in the firm. We carry on selling a lot of Amiga's and CD32's in the UK and work continues on new products. Commodore's original plan, in other words, but with more backing and fresh optimism.'

## Over the wire

**A regular spot where Edge reports on how technology will shape the news of the not-too-distant future...**

At a secret press conference in Tokyo today, SunnyCorp® unveiled 'Artifice', the world's first completely artificial games creator.

Artifice is currently a floor-standing box weighing about 200 kilos, but SunnyCorp® say the finished version - Artifice II - will be available to licensed software developers as a standard PowerPC expansion card.

Artifice can produce finished source code in hours, having been given certain basic program specifications. These include the game genre (shoot 'em up, VR3D, platform, rolePlay etc), sprite and background graphics, and game mechanics. The designers say that games that previously took weeks to code up can now be completed in hours.

More significantly, though, Artifice is equipped with a microWave link-up to the SunnyCorp® dataSat above Tokyo. SunnyCorp® has accumulated a vast body of consumer data over the past three decades, all of which is stored in the dataSat. It's believed that the SunnyCorp® dataSat has detailed information on over 93% of NorthAm's inhabitants. This information includes earnings, education, consumer purchases and leisure activities. Previously, SunnyCorp® has used this data to make marketing and design decisions - with huge success. Artifice can talk to the dataSat directly. But Artifice is not simply a channel for market information - it is the end user. Artifice can not only program games - it can decide what games to program.

The reaction from the press and programmers' organisations has been angry. Their complaints range from the practical, that thousands of programmers face redundancy - to the altruistic, that the SunnyCorp® machine is designed solely for audience manipulation.

In a rare display of frankness, SunnyCorp® acknowledge the second claim to be true, but point out that this manipulation has always existed. Game construction has always, they argue, been market-led and formulaic. And Artifice can follow the market much faster than any marketing team and produce the most formulaic results possible.

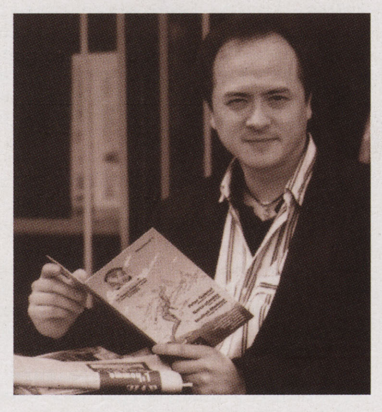
The critics were effectively silenced when programmers cited the year's most popular game to date, *Ziggurat*, as a game that no machine could have produced. It appears *Ziggurat* was the result of an early Artifice beta-test, released secretly under a non-SunnyCorp® label.

Interestingly, SunnyCorp® are rumoured to be working on 'Artifice III', a magazine development system, in preparation for their first foray into information-based media. SunnyCorp® are allegedly 'confident' of its success. They refuse to comment on suggestions that beta-test products exist...
...transmission ends...

Contributions to **Over The Wire** are welcome. Please send your articles (400 words max) to **Edge**, 30 Monmouth St, Bath BA1 2BW. Get your piece printed and win a year's subscription to **Edge**

# **Surfing** in on the **silver** disc

**French publishers LVI Presse are issuing in the interactive wave...**



**Michel Besnier, editor of LVI, clutching the premiere issue. Michel also often acts as roving reporter, weighed down with camera, camcorder and DAT tape**




LVI Presse: 010 331 48 03 31 17

**La Vague Interactive, le magazine 100% numerique. Produced by a group of French artists, this mag-on-a-CD certainly shows the potential of the format**

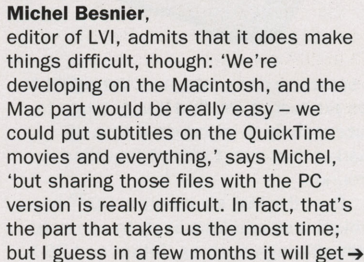
While many computer magazines are scrambling to put CD-ROMs on their covers, the French are taking the medium a step further – and putting an entire magazine onto the CD itself.

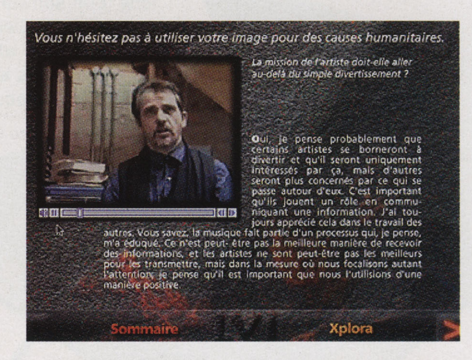
La Vague Interactive (literally 'The Interactive Wave') is so far only available to French owners of PCs and Apple Macs. The special double-disc launch issue is currently selling in France for FF112 (£11), although the second issue, due out in June, will consist of a single disc and cost around FF149 (£15).

This may sound expensive, but if the launch issue is any reflection on later disks, it will be well worth it. The disk is beautifully presented and crammed with interesting material. Issue 1 of LVI contains game reviews, artwork and features – such as a video interview with Peter Gabriel plus working demo of his *X-Plora 1* CD (revealed in **Edge** 5).

The second CD is devoted to the full-length Gabriel interview plus some animated movie clips. One of them, Starwatcher, is a fully rendered movie visualised by French artist Jean 'Mœbius' Giraud and directed by Ridley Scott.

The discs are dual-format, able to be read by both Mac and PC CD drives. However, this doesn't mean that only half the information is available, since text and movie files are shared by both PC and Mac systems. **Michel Besnier**, editor of LVI, admits that it does make things difficult, though: 'We're developing on the Macintosh, and the Mac part would be really easy – we could put subtitles on the QuickTime movies and everything,' says Michel, 'but sharing those files with the PC version is really difficult. In fact, that's the part that takes us the most time; but I guess in a few months it will get →






**Star of the first issue of LVI is an interview with Peter Gabriel about his *X-Plora 1* CD-ROM – there's also an interactive demo on the disc**




**LVI's contents page is also your doorway to the CD. Alternatively, the rocket icon brings up a quick-find page (inset) for immediate access**




**Les Jeux is LVI's games section, complete with previews of CD games like *Mega Race* (above). Again, video clips say more than words ever can**

**As well as previews of games like *Rebel Assault* (above), LVI also reviews a selection CD titles – including (from top) *Myst*, *Microcosm*, *TFX* and *Iron Helix***

← better as the tools improve.'

LVI may be a quarterly publication, but the production schedule is still tight. 'We take about two months to make the magazine, choosing subjects and doing the articles,' says Michel. 'But beyond that we have to work very closely with the artists and the programmers and we have just one month left to produce the disc.'

The LVI crew have been working on the project for over a year. Because of the multi-disciplinary status of the medium, LVI has brought together people from a variety of fields – information technologies, the music industry, radio, journalism and so on – and relies on a larger team than a conventional magazine. As Michel explains, 'There are a lot of people but there are several freelancers, so in the office there are permanently about 15 people. There are musicians, journalists, graphic artists who we commission for artwork or animation, and so there may be around 20 people working on each issue.'

**The first issue** had a production run of over 30,000, with the bulk of that going to Apple France as part of a bundling deal. Michel elaborates: 'In France we aren't thought of as a magazine but as software. French law doesn't yet consider it as a magazine or a book – in the shops, we're not with the books, but with the software. Stocking in newspaper shops also costs a lot of money, so we thought that to distribute it as a bundle would be easier and cheaper for us. The first big deal we had was with Apple France, who bought 29,000 copies.'

LVI Presse also made a dummy issue zero, which alone managed to generate 2,000 subscribers. 'And we're selling 100 a week in every Snak,' Michel enthuses (Snak is a general store like a Virgin Megastore).

Like most magazines LVI requires the support of advertising, and

## i wish...



**Gary Bracey**

❛ 1 That the industry gurus would stop complaining about the lack of originality in games and do something about it.

2. That there was a standardisation of hardware formats.
3. That magazines were a little constructive when criticising a game.
4. That hardware companies released development specs when promised (or is this 'glass house' syndrome?).
5. That the perception of 'original gameplay' was something more than a derivative concept with a new cute character.
6. That virtual reality concentrated more on the reality and less on the virtual.
7. For standard PC sound cards, all 100% compatible and requiring no set-up configurations.
8. There was an alternative title to what we create. 'Videogame' sounds too childish and 'interactive entertainment' is too pompous. Any suggestions?
9. That **Edge** magazine had a justifiably greater circulation (creep, creep, crawl).

Alternatively...

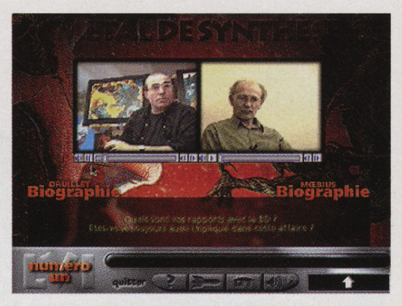
For a week on a desert island with Janine Lindemuler, a case of baby oil and... ❜

**Gary Bracey,** is software development director at Ocean Software in Manchester.


**Continued** next page




Image & Son is LVI's arts section, which plays host to Peter Gabriel plus...

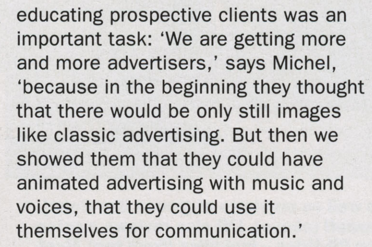



... French artists Druillet and Jean 'Mœbius' Giraud. The disc contains question and answer sessions with both men, plus...




... a collection of their work with stills and video clips from their animated films, Salaambo and the spectacular Starwatcher (above)

Continued



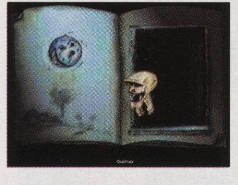
educating prospective clients was an important task: 'We are getting more and more advertisers,' says Michel, 'because in the beginning they thought that there would be only still images like classic advertising. But then we showed them that they could have animated advertising with music and voices, that they could use it themselves for communication.'

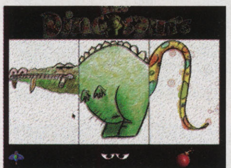
The original idea for LVI was based on American titles such as Nautilus which, like many CD-based mags, carried a covermounted CD with demos and shareware programs. However, with the influx of staff – including Michel – there was a growing feeling that the group should take the medium one step further in order to create real multimedia, rather than merely a compilation of words and pictures.

And this is how it got to be called La Vague Interactive: 'There two meanings,' explains Michel. 'When we started it, we began looking for finance and we tried to describe to people that it was going to be a big wave, the multimedia wave. And after saying this over and over, we said okay, we're going to call it the wave!

'The other part was, in the Sixties there were the French directors like Truffaut and Goddard; they launched the 'new wave' because they thought people could make their own movie without the trappings of a studio. They said that people could have their own creation and be the artists themselves. And so it was a little bit of this idea, like we can do something interesting without being involved in a big group, and create something attractive; something more than just a promotional disk.'

An international version is planned with English text and dialogue and LVI are looking for distribution the UK. However, anyone taking a holiday in France during June should look out for LVI Numéro Deux: it contains an interactive comic for kids, plus cover artwork by Judge Dredd artist, Brian Bolland. E





Planète Kids is a bit of fun for the youngsters: click on the picture (top) to make the moon come out and the scary monsters appear. *Dingosaurs* (bottom) is a pick 'n' mix game in which you can create your own dinosaurs

## Advertainment

Edge's showcase for the worldwide recognition of videogame advertising. First off the reel, Sega do it doggy fashion



**1** Sega's shaggy dog story: A stray mongrel trundles across the common when he spots a couple of strange objects lying in the grass. Sniff, sniff, wag, wag, etc, etc



**2** Better get a closer look in case it's something edible, sniff, sniff. It's a couple of handhelds, wag, wag. A Nintendo Game Boy and a Sega Game Gear. Let's see what they can do...



**3** So what's this then? Green graphics. Looks terrible: 'Creamed spinach colour' as the ad says. Sega then dubs plop, plop, plop sounds to sync with the falling blocks. A perfect mockery




**4** Of course the Game Gear looks great. 'Big, bright, and beautiful', in fact. Fast action, colour graphics and above all, Sonic the bleedin' Hedgehog. More than enough for any hungry canine

Anyone with a decent Mac or PC monitor can enjoy the work of H. Scott-Flament: LVI's gallery contains dozens of his fantasy paintings



LVI's advertisers (top) can show anything from a still picture, like *The 7th Guest*, to a running demo of Apple's QuickTime video

### LVI contents, issue one

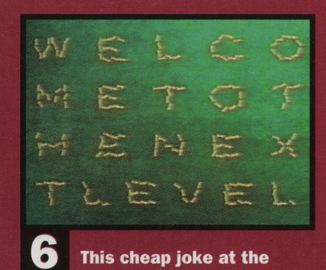
| | |
|---|---|
| **Total screens, Mac:** | 135Mb |
| **Total screens, PC:** | 150Mb |
| **Advertisements:** | 85Mb |
| **Quicktime video:** | 100Mb (shared) |
| **Sound:** | 85Mb (shared) |
| **TOTAL DATA:** | 555Mb |
| **Shareware programs:** | 40Mb |
| **Drivers** (QuickTime, Readme files) | 6Mb |
| **TOTAL DISC:** | 601Mb |

### Credits

Michel Besnier
Sylvain Roume
Thierry Keller
Julien Demoly
Luc Lemaire
Philippe Constantin



**5** The spoken moral of the story: 'If you were colour-blind you wouldn't care what handheld you bought. Then again, you wouldn't care if you drank out of the toilet, either...'




**6** This cheap joke at the expense of vulnerable gameplaying dogs culminates in 'Sega!' barked loudly in our faces

# Datebook

## June

**Multimedia Exhibition:** Tuesday 7th June-Thursday 9th June, Earls Court, London. For all things Multimedia. For more detail call the show organisers on: 081-742 2828.
**Computer Solutions Exhibition:** Tuesday 7th June-Thursday 9th June, Scottish Exhibition & Conference Centre, Glasgow, Scotland. For more information contact show organisers Trident Exhibitions Ltd in Devon on: (0822) 614671.
**Consumer Electronics Show:** Chicago Thursday 23rd June-Sat 25th June. by far the biggest show in the games calendar and a must for all industry persons. Organised by Consumer Electronics Group of Electrical Industries Association. Call them on 0101 202 457 8700 for more information.
**SPA Europe 5-8 June:** Palais des Festivals, Cannes. Conference of the Software Publishers Association Europe. Call on 010 331 45 63 02 02
**Net Works Exhibition:** NEC, Birmingham. Tuesday 28th-Thursday 30th June. Contact Blenheim Online on 081-742 2828 for further information.
**All Formats Computer Fair:** This one-day event will take place on the 19th June at the Novotel Hotel, Hammersmith, London. Contact Bruce Everiss on (06080 662212 or fax them on the same number for more details.



## July

**Computer Networking Exhibition:** Networld Interlop; Tokyo, Japan, Monday 25 July-Friday 29 July. Call Interlop Europe on 01046 39 56 56 or fax them on 01046 39 56 99 for more information.

## August

**Live '94:** The Consumer Electronics Show. 20-25 September, Earls Court, London. Not to be confused with the American CES, this is the UK's showcase for all things electronic. Ticket prices: adults (weekday) £4; adults (weekend) £7; accompanied children £3; family (two adults, three children) £16. For further information call 071-782 6893/4/7.

**Business Computing Exhibition:** Tuesday September 27-Friday 30th September. This event will be held at Olympia Exhibition Centre in London. For more details call Montgomery Exhibitions Co Ltd, Richmond, Surrey on 081-948 9800, or fax them on 081-940 2171.

**Show organisers:** if your show isn't listed here, it's only because you haven't told **Edge** about it. Do so on 0225 442244, or fax us on 0225 338236, or send details to **Datebook, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW**

# This Month on Edge

**Edge** casts out its net for another mixed haul of spurious rumours and late news

The Tokyo Toy Show is fast approaching and takes place in Chiba between the 2nd-5th June. Promised attractions are *Super Street Fighter II* on SNES and Mega Drive and, for the first time publicly, the trade will get a glimpse of the Saturn on the first day of the show. Sega have promised to display Saturn complete with prototype joypads as well as demos of some of the ten software titles to be available during the first month of launch. Apparently, the three original titles already shown will make an appearance – that is, the clockwork knight game, the 3D shoot 'em up and the soccer game (see **Edge** 7 and 8).

**It's expected** that two of the first Sony games for their PS-X system will be *Labyrinth* and *Spring Man 9* (see screenshots in **Edge** 9). On May 20th Sony Computer Entertainment will be making several announcements in Japan regarding the name of their new system, the intended price, and the other software that will be available at the launch in November. Check out **Edge** 11 for all the details.

**Following news** that Konami are already well into the PS-X development schedule, **Edge** has heard that a massive 11 projects are planned by the Kobe-based company for this powerful new system. A new version of *Gradius* could be on the cards.

**NEC's new 32bit FX system will be shown to the Japanese press later this month**

**Edge had several calls this month regarding the imported version of *Virtua Racing*. Apparently, when the game is played, it has a habit of setting off the telephone – possibly something to do with the SVP chip inside the cart. Needless to say, Sega have refused to comment**

**Apparently, Mirage's** finished *Rise of the Robots* coin-op won't look half as 'dreadful' as **Edge** suggested it was in **Edge** 9. Mirage have stressed that the finished version will be twice as fast, with twice as many colours; the ECTS version ran on a very early prototype PCB.




**It's that damn game again – the relentlessly playable *Super Street Fighter II*. The conversion looks spot on (SFC screens)**




**Capcom's set of *good* programmers will no doubt be glad it's all over again. Until the next version**

**It's that time of year again. Capcom's best programmers get their first rest of the year and *Street Fighter* fans have to remortgage the house as the latest and most expensive version of the game gets warmed up for a summer release. *Super Street Fighter II* has better graphics, a taller screen and the SFC version is due on Japanese shelves on June 25th. An MD version is at the same stage of development. Start queuing at your local importer, if you feel it's absolutely necessary**

**NEC are** gearing up for a 32bit hardware launch. Just as **Edge** went to press, the company invited Japanese journalists to see their 32bit FX system and games in action. Details should follow next month.

**Decent games** that failed to make it into Testscreen in time: Core's *Battlecorps* looks good. Since the game was first shown in **Edge** 5, the frame rate is higher, and the level of destruction is highly rewarding. *Soul Star*, apart from a rather dodgy colour scheme, looks very slick, too. How come the best Sega's in-house guys can come up with is the pathetic *Heavenly Symphony*?

**Apologies to** those looking forward to **Edge's** *Neo Geo* analysis, as promised last month. Set backs include a flurry of rumours surrounding SNK's plans for June – apparently the company will unveil new hardware at the Tokyo Toy Show. A clearer plan will emerge soon.

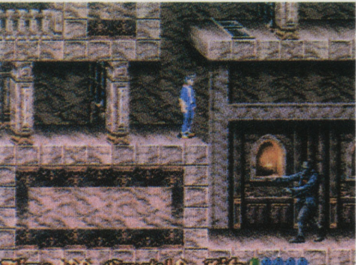
**One of** Sega's next Model 2 coin-ops is a 3D texture-mapped space game like *Galaxian 3*. Both this and Titan – Sega's new arcade hardware – will be appearing at this year's JAMMA show in August. You can also expect *Virtua Fighters 2* to show up.

**Sanyo are** finally committing themselves to a launch of their 3DO player later this year in Japan. Unfortunately, there's no news on the price just yet.

**'Future** Entertainment 94' organised by the publishers of **Edge** will be this autumn's biggest computing and interactive entertainment event, taking place between 26th-30th October. All visitors purchasing a ticket before 31st July will be eligible to enter a competition to win a £100 voucher to be spent at Silica's stand at the show. When booking early tickets (£6 each), you'll be asked the following question: In which city is this magazine written? Dial the show hotline number on 0369 4235.

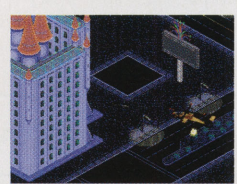
**3D Studio** animators are being invited by Autodesk to exhibit their work in a new video that's being prepared for this year's Sigraph show. Contributions should be sent on Betacam tape to Autodesk's UK headquarters at Autodesk Limited, Cross Lanes, Guildford, Surrey, GU1 1UJ.

**16 megs of *Castlevania* meets *Prince of Persia***



**Seta's incredibly delayed *Nosferatu* for the SFC (above and left) finally makes it out this September in japan**





**Strike 3: EA's latest installment in their popular scrolling shoot 'em up series, *Urban Strike* looks good. Expect some *Cannon Fodder*-style action, too**





# viewpoint

Write to: **Edge** Letters, 30 Monmouth Street, Bath, Avon BA1 2BW. (Sorry, no personal replies)




Wanted: opinion-formers with fresh ideas and intelligent views about the world of videogames

I would like to make a point about all the marketing hype that surrounds the Saturn console. The console isn't ready yet. It would be out today if it was. Artists' impressions may be accurate, but no games magazine has shown a photographic picture of the console. All that has been seen is videos of possible games which look very impressive but were probably generated by workstations.

Sony are being honest about their PS-X system, which they say will be out around mid '95. I'm sure they're taking their time to get it right.

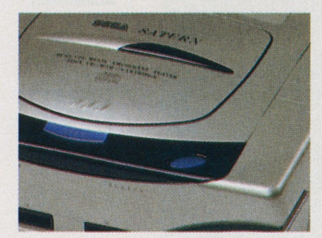
For the moment, the Jaguar is technically the best console. Its future games will be very impressive. The 3DO is also very good technically and, unlike the Jaguar, has a growing number of games to keep owners happy – games like *Twisted* are what the 3DO needs. The Amiga $CD^{32}$ has yet to show what it can do.

These three games consoles are here, but where is Saturn? Still under the spell of the logic analyser, waiting for a breakthrough in chip technology that would bring its price tag down to an acceptable £300.

I think by the time autumn comes, 3DO, Jaguar and $CD^{32}$ will be showing games that will draw people away from the hype surrounding Saturn.

But when the Saturn does finally become available, I want to borrow one, cos I won't be able to play *3D Sonic*, *Virtua Fighters* or *Virtua Racing* on my Jaguar!

**Rod Aries, Glasgow**



**With 3DO and Jaguar already here, is Saturn worth waiting for? (See letter from Rod Aries)**

Okay, so Saturn's final specs are still not decided on, but even if they were, the machine probably wouldn't be out in Europe for another six months to a year. Marketeers decide when a machine is sold, not engineers. As for Sony's PS-X, it should be ready by this November in Japan and imports will flood into the UK as fast as companies can lay their hands on them.

Current software for the $CD^{32}$, Jaguar and 3DO is underprogrammed – to a degree, this reflects those machines' (albeit limited) advances in performance. It would be nice to think that the quality of software will improve sufficiently to quell the ballyhoo surrounding the arrival of the new systems, but frankly, it's unlikely.



**Some of the PC's problems were explored in Edge 7; Serge Diekstra (see letter below) has a few more to add, plus a potential solution...**

Your article, 'What's wrong with the PC?', in the April issue of the magazine, raises some very important questions about the future of the PC. I agree with you that the Pentium is not really going to solve the problems the PC is facing, but I see another problem that is threatening the dominant position the PC has in the games market. Most 486 PCs now come with a graphics accelerator on a high-speed local bus. All these PCs have blitting and polygon-drawing hardware built into the graphics chips. Some are extremely powerful and are significantly ahead of today's consoles.

The problem is not so much the hardware, but the software. There are tens of thousands of PC hardware manufacturers today and a lot of them use their own chipsets and their own proprietary technology. *Windows* uses these accelerator functions, but the performance penalty *Windows* demands is just too great for games. It is impossible for a games programmer to write routines for each graphics board. The only standard he can rely on is (Super) VGA, and thus he won't use the 'accelerator' functions that would really speed things up. If the PC games industry doesn't manage to solve this problem soon, its games will not even come close to the standard offered by Project Reality and Saturn.

There is really only one way around this: the industry will have to form an association to standardise a games operating system that is small, efficient, hardware-independent and scalable. Something like a

Carnegie-Mellon Mach kernel with a very efficient HAL implementation would be nice. Only then will games take full advantage of today's and tomorrow's graphics hardware. It will drastically shorten game development and debugging time and it will make sure that any game using the operating system will work with your graphics and soundboard. When you buy the latest hardware, even your old games will take advantage of it. It is about time PC games developers grew up and stopped rewriting hardware routines that have been written by hundreds of thousands, if not millions, of their colleagues before. It is time for JGEG: the Joint Game Experts Group.

**Serge D E Diekstra, Holland**

Anyone who read the *Taos* feature in **Edge** 9 will know that a universal operating system already exists, and could start to make an impact in the near future. The proposed Plug 'n' Play system, which solves the problem of incompatible add-ons (eg soundcards) is also an important development.

However, optimising the PC's performance is one thing, but boosting it with a custom polygon generator is far more likely to keep it in the running in terms of fast 3D games. UK developers Argonaut are thought to be tackling this matter head-on.

I am a loyal reader of your brilliant magazine. It is the only computer magazine that I read but I still feel completely up to date with the videogaming world.

At the moment I am in between formats after selling my Amiga 500 a year ago. Yes, I am one of the many confused punters you constantly refer to who can't come to a clear decision about where to spend their money.

However, there is one format that has the widest range of software and the best-quality games; a format that every gamer is dying to own but is simply too far out of reach because it simply doesn't make economic sense… Yes, it's the mythical PC.

Like every other human being this side of Saturn, I intend to buy a Sony PS-X when it emerges (will it be compatible with Saturn?), which, according to you, will retail at around £350. Its hardware compared to the PC is like Linford Christie compared to John Major, and yet a decent PC costs four times more than the PS-X will.

Surely there is a company out there that would like to make an easy bob (or a few million) without all the research and development involved in creating a new format, by developing a PC-compatible console that is powerful enough to run the most advanced games but basic enough to sell for under £500.

This would undoubtedly sell bags and the software industry would become even more vibrant than it is at the moment. A keyboard costs practically nothing, yet it gives access to flight sims and adventures.

If **Edge** is as widely read in the industry as you claim it is, then you are in a good position to do something.

**Christopher Ratcliffe, Cambridge**

To be reasonably confident of keeping up with the Jaguar, 3DO and the like, you'd need a system based on a 486DX2-66, with at least four megabytes of RAM, local-bus graphics and a decent soundcard – say, a Roland. All for under £500? Even without the usual PC accoutrements, such as a monitor and a keyboard, that's perhaps being a little optimistic.

The chances of Saturn being compatible with PS-X are somewhere around zero.




**Acorn's machines may be technologically advanced, but their low games profile limits their coverage in Edge. (See letter from Joe Hind)**

Why do hardly any of the multiformat magazines feature the latest machines from Acorn? I notice there is no mention of the Apple Mac on the front cover of **Edge**, yet you seem to be able to feature software for that. Lots of people own A3000/A3010 or A5000 machines, and many people play games on them. Krisalis have converted a lot of games from other formats, and Fourth Dimension also produce original and technically excellent Acorn games. You gave away an A3010 in a competition, saying what a nice machine it is, so why can't you feature it in **Edge**? The publicity would encourage owners to buy more software and popularity would grow. There is a CD add-on available as well, so its prospects are healthy. I think you may be surprised at how many Acorn machines are used for entertainment, rather than just in schools.

**Joe Hind, Somersham, Cambs.**

Acorn's computers have a tiny slice of the games market – even smaller than Apple's – and therefore don't receive much original development. However, Acorn's technology is still of interest, hence the story about their new RISC-based PC in last month's **Edge**.

The price of a console is of paramount importance in relation to its performance in the marketplace. Nintendo's approach to pricing is certainly mercenary, but it works. They package a console with a flagship game such as *Mario* and sell it for a reasonable price – usually well below £200. Through this approach they manage to shift millions of units and generate high profits from software sales to large installed userbases.

Conversely, expensive consoles such as CD-i, Neo-Geo and, recently, the Mega CD have suffered from poor sales. The disappointing market showing of the Mega CD has shown that a pricepoint above £250 drastically reduces hardware sales. Only a fringe market exists for any console that costs more than the average teenager can afford.

When it finally appears sometime next year, Nintendo's 64bit console is unlikely to cost more than £200. Excellent software from established houses such as Square, Enix, Konami, Capcom and Nintendo themselves will fully compensate for any hardware deficiencies.

Since Sega's Saturn and Sony's PS-X are likely to cost around £300, they are dangerously vulnerable to becoming a purchase exclusive to technophiles. To avoid another disaster of Mega CD proportions, Sega and Sony need to seriously reconsider their pricing strategies.

**Thomas Walsh, Dublin**

Sega have just addressed this problem with their £150 Mega 32 adaptor, to be released around Christmas, but it's still unclear how this hardware will compare with the finished Saturn. As for Sony, don't write them off yet: as reported in **Edge** last month, their system is now rumoured to be coming in at around the ¥30,000 mark, conveniently bringing it below the magic £200 threshold (although you'd have a job getting them to admit it).

Having read **Edge** since issue 1, I would like to congratulate you on being the only magazine which gives accurate, non-biased information on new developments and progress in the videogame world. I have been playing videogames for about ten years – on computers and consoles as well as coin-ops – and I spend a lot of time

Continued next page

# viewpoint

playing games and reading up on new releases and developments.

The reason I am writing is that I don't know why videogaming is not recognised as a sport. There is very little in the way of television coverage of videogames, and many people still regard it as 'a waste of time and money'. However, it takes as much, if not more, skill and dexterity to play many videogames as it does to play darts or snooker, and some games require greater strategy than chess, but still those who don't understand games put them down. I am sure that there are far more people who are interested in videogames than chess, but still there is an international chess championship, and much of this is televised, so why is there no equivalent for us? Okay, there have been attempts at this, such as the Sega European Championships, the National Games Championships and, recently, the GamesMaster Team Championships, but none of these were comparable to sporting events such as the FA Cup or the RAC Rally. Some people may argue that are so many different games and genres that it wouldn't work, but what if each major software house were to designate one game each year for contestants to compete on? This would be excellent advertising for companies, as well as being good publicity for videogaming in general. Maybe it could pave the way for professional players?

Could this be the future of videogaming?

**Billy Deakin,**
**St Agnes, Cornwall**

Videogames make a pretty poor spectator 'sport' and telecasts of competitive videogame events are unlikely to be compulsive viewing. Having said that, the Japanese games industry is very event-driven, and major new releases are often promoted with championships which are often televised; this approach could make its way over here.

Videogames are supposed to be fun; the prospect of serious 'professional gamesplayers' is a little worrying, to say the least.

At first, I was very pleased to see an article in **Edge** about the CD³². Having read several CD³²-dedicated magazines, I was looking forward to a non-biased view.

However, while reading the article, I realised that the writer was very much against Commodore's machine. So much so that he degraded it as often as he could and grudgingly admitted the good points. The screenshots shown were dull and there was no mention of the sheer depth and beauty of *Liberation*, or the gorgeous raytraced graphics in *Labyrinth Of Time*.

At the moment a CD³², at £299, is good value for money. It is top of the CD games market, beating PC CD-ROM and Mega CD after only four months. But what will happen when Sega Saturn and Sony PS-X arrive? Can it stand up to their awesome spec? The answer is no, it hasn't got a chance… at £299. But at this time next year, when Saturn and PS-X should be available worldwide, I think you could expect to see the CD³² selling for an attractive £175 or less. Also, by then it will have a vast range of CD³²-specific titles and a sturdy base of supporters. The CD³² already has over 50 games, costing between £10 and £30. Some of these are rubbish, but others are very playable Amiga classics with upgraded graphics, slick scrolling and CD-quality soundtracks.

And the CD³² offers compatibility with the most popular home computer in the world: the Amiga. That's something even the great Sega and Sony can't match.

**Alex Rosen,**
**London**

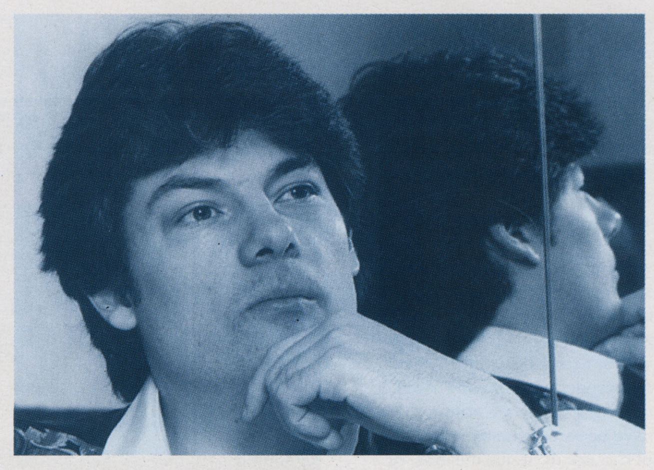





**Edge's CD³² feature caused some controversy. Do games like *Liberation* (inset) represent the future of videogames? (See Alex Rosen's letter)**

It's easy to see why so many people have got excited about the CD³²: it has the Amiga name behind it; it has a 32bit CPU; and, above all, it spins silver discs (this tends to excite people a lot). However, its biggest problem is that in hardware terms it simply doesn't offer anything new. And that's all too apparent in the software available. Even the best games for the Mega CD (*Sonic CD*, *Silpheed*, *Thunderhawk*, etc) eclipse the CD³²'s current catalogue. Given that **Edge** gets to see the best videogame hardware and software the world has to offer, its appraisal of the CD³² was spot-on, reflecting the machine's shortcomings in comparison with other systems while also acknowledging its assets.

You can't have it both ways: if you want a magazine that's critical and impartial, you can't then complain when it tells the truth about a machine you happen to own. It's you who's biased, not **Edge**.



**Archer MacLean: what *is* the machine he was talking about in Edge 6? (See letters from Marc Gibb and Nathan White)**

In reply to Stuart Patterson's letter in **Edge** 8: Archer MacLean said the machine he called 'unbelievable' (**Edge** 6) was the same size/shape as the Mega Drive 2 and would cost £200 to £300. The machine he was talking about must be the Atari Jaguar.

In **Edge** 8, you also said that Atari might be adding a texture-mapping chip to the Jaguar's CD drive, plus an extra 1 megabyte of memory and another 64bit processor. This could easily be done, because the Jag's DSP chip is closely linked to the cartridge port. Therefore you would have two 64bit processors plus a 32bit DSP and a 16bit processor, all running in parallel. I am sure you would agree that the power this would provide would be more than a match for the Sega Saturn or Sony PS-X.

**Marc Gibb,**
**Aberdeenshire**

How do you know that the machine Archer MacLean was talking about isn't one of Commodore's future projects? He said that its computing power relative to an A500 is measured in the hundreds. Surely large Japanese

corporations like Sega, Nintendo and Sony wouldn't compare one of their new systems with an Amiga 500?

**Nathan White,**
**Walsall**

Let's wrap this up, if only for Archer's sake, eh? No, it's not Commodore's new Turbo 64 console, and no, it most definitely isn't the Atari bloody Jaguar (with or without CD drive). To be honest, if you haven't worked out what it is by now, there's little hope. As for the A500 reference, Archer is familiar with the power of Commodore's machine, so it provided him with a useful benchmark. Now let's forget this ever happened, shall we?

You don't seem to be able to make your mind up about the PC. Your April article was pretty scathing, to say the least, and the PC didn't even feature in your May 'Leading Edge' supplement. Why? You only concentrate on the bad aspects of this machine, not the unrivalled growth over the last couple of years, the best games (at least graphically) and good support from software developers. Other systems also have problems, like an inability to play foreign titles, but you don't see this as an issue. I often think that I am reading a 3DO-only magazine. The problems the PC has are being dealt with right now, and readers with other machines may not be aware of the competition on the hardware front in the PC sector, which will lead to faster, cheaper processors almost quarterly, plus 24bit colour cards and custom chips. This will mean the PC becoming every bit as capable as other formats – and it can do more than just play games. And the most powerful argument in favour of the PC is that five years from now it is the only machine guaranteed to be around.

How can you show breathtaking games on the PC, then on the other hand brush aside the format that has been at the leading edge for a while now (eg multimedia, MPEG)? Surely you realise how significant the growth in the PC home market is seen as by others?

I hope you can appreciate constructive criticism and will return to unbiased reporting.

**Moyle Baker,**
**London**

The feature hardly 'brushed aside' the format; it merely highlighted a number of fundamental problems in the PC's architecture. Until better software or hardware solutions arrive, the PC will continue to frustrate and mystify even the most capable of tech heads, and that's something potential buyers should be aware of. Where's the user-friendly interface of the Macintosh, for example? Why can't you get a game up and running straight away, like you can on an Amiga? Why, even when you've got a decent soundcard, are some of the most breathtaking games often backed by music and sound effects only fit for a Spectrum? Of course, **Edge** would be the first to admit that the awesome 3D power of a fast DX2 is unmatched, and the format continues to receive some of the best games around. But – in terms of hardware performance anyway – the PC is unlikely to rule the games roost for much longer.

**What is gameplay? And why does *Tetris* have it in abundance, while other games are completely devoid of it? (See letter from M Ellis)**

With the powerful technology that is being thrown together to make consoles for a fast buck, it is about time that we got back to our roots. It seems these days that anyone can make a good console given the right components. Maybe it would make more sense if a group of software houses got together to develop their own console that would be versatile in meeting their requirements.

It is also apparent after reading views expressed in your magazine and others that many games these days are all graphics and no gameplay. I remember this debate when people started playing games on their shiny new C64, ridiculed by Spectrum owners whose machines were technically inferior but had better gameplay. Eventually the C64 caught up; maybe the new machines will discover the importance of gameplay as well.

I think you should direct a study into what makes a good game. For example, *Tetris* on the Game Boy keeps me entertained for hours, while *Lawnmower Man* (PC CD-ROM) amused me for about half an hour. If we could isolate what makes a game addictive, we would all benefit from the discovery.

**M Ellis,**
**Middlesex**

One of the reasons for the lack of innovative gameplay these days is that games have reached an insurmountable technological barrier. Think about it: fast, responsive 2D gameplay was virtually perfected back in the golden days of the Spectrum and C64. Since then, games have progressed in the sense that they look and sound better, but the gameplay has remained essentially the same. There's now little scope left for true innovation in 2D. And therein lies our problem.

Currently, the videogames world is burdened with a huge technical challenge: to try and create 3D games as fast-moving and responsive as their 2D forebears. Realtime 3D will open up a whole range of immersive experiences and give gameplay an incalculable boost, but current hardware still falls way short of the mark. Not for much longer, though…

Multimedia madness has finally been released upon the public. Overnight, a seemingly endless supply of new magazines has descended upon newsagents all over the country, all brandishing a nice, shiny, silver disc. People are confused about which magazines are worthy of inspection; they succumb to greed at the thought of acquiring gigabytes of software, rip out a wad of cash to buy every magazine in sight, and are promptly ripped off themselves.

I myself have obtained five CD coverdiscs in the space of two weeks, only to find that the same software is represented on several of them.

I have yet to find a single CD magazine that has impressed me in the slightest. With so many new publications, it will be interesting to see if more than one or two survive a few months, as Joe Public isn't going to keep shelling out a fiver for a CD full of duff software.

As long as **Edge** keeps arriving each month, I know there will be a magazine worthy of a few hours of my time – even without a CD on the front.

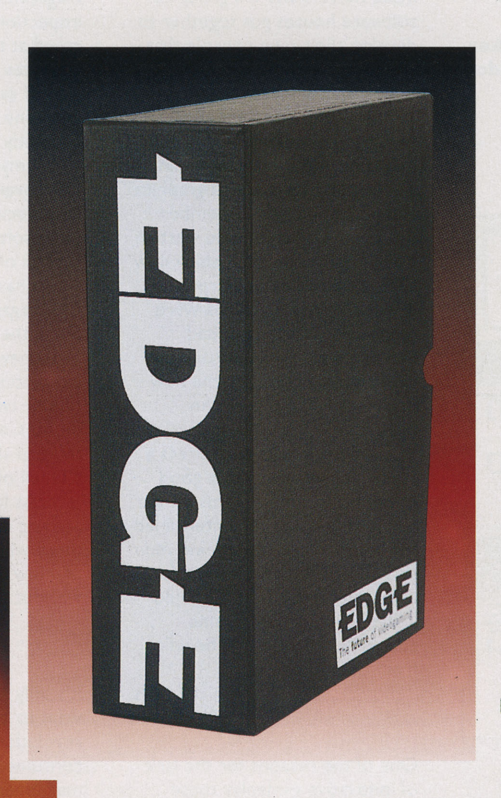
**Roger Isaac,**
**Doncaster**

It's only natural that publishers want to exploit the CD-ROM revolution. It's up to you, the consumer, to decide which magazines, if any, succeed.

The CD's immense storage capacity has to be filled somehow, and publishers have chosen to fill them with game demos and miscellaneous bits of software. Unfortunately, there just isn't enough good, cheap software to go around.

In the future, we'll no doubt see CD-ROMs offering true 'interactive experiences' – or even replacing the magazines themselves (see LVI story on page 16).

# Do you **want** to see **issue 11?**




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# **Pre**screen



Just when you thought it impossible to reinvent the platform game, Dave Perry and his newly formed development company, Shiny Entertainment, reveal *Earthworm Jim* – boasting bags of imagination, slick programming, and apparently, some superbly crafted gameplay.

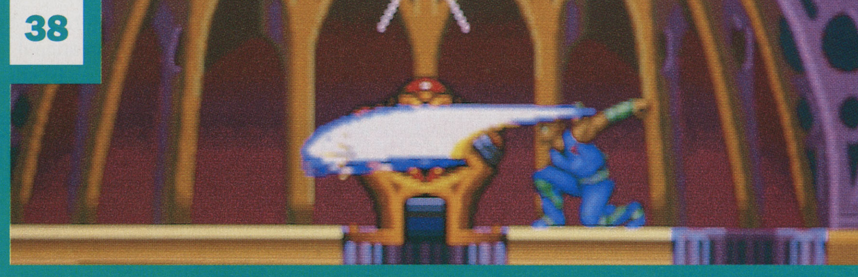
Origin's *BioForge* gets a look-in – a great-looking adventure, as well as 3D scroller *System Shock* from Looking Glass Technologies, the creators of great games like *Car and Driver* and *Ultima Underworld II.*

After almost three years in development, *Dungeon Master II* from FTL is here for Mega CD owners. And a darn sight better than *Heavenly Symphony,* it is too. One of the first Japanese 3DO games – *Doctor Hauzer* – looks promising. This blatant *Alone In The Dark* rip-off is proof that the Japanese are getting behind 3DO. And about time too...

29


30


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# Jurassic Park Interactive










**Choose your next destination (top) and (middle). A sad Space Invader clone (bottom)**

| | |
|---|---|
| Format: | **3DO** |
| Publisher: | **Universal Interactive Studios** |
| Developer: | **Studio 3DO** |
| Release date: | **Out now** |
| Size: | **1 CD** |
| Origin: | **US** |

After the dreadful Mega Drive version and the so-so SNES game, *Jurassic Park* for the 3DO is at last here.

Given the 3DO's capabilities – and the fact that Universal Interactive Studios are backing it – this version has the potential to be the best yet.

You take the role of a engineer based on Isla Nublar, an Island located just off the coast of Costa Rica. Your job is to check the safety of the park. Soon after you arrive, the power fails and the dinosaurs escape. You've got to get the park back 'on-line' and rescue the guests by leading them to the safety of the heliport.

All very good in theory, but *Jurassic Park Interactive* is in fact made up of a series of sub-games. And the trouble is, these sub-games vary so much in quality: from the dreadful (not to mention hilarious) '*Opp-Wolf*' clone to the superb 3D Raptor Maze chase, *Jurassic Park Interactive* is one erratic package. And sadly, no matter how hard you look, you won't find much innovation here – one of the sub-games is a *Space Invaders* clone for heavens sake!

Whether there'll be enough good sub-games to make up for the poor ones remains to be seen. Either way, check out next issue where we'll be giving *Jurassic Park* the full Edge treatment...




**This texture-mapped 3D scenery is very impressive – it moves as well as it looks. A pity the same couldn't be said of that velociraptor...**

**No matter how hard you look, you won't find much innovation here – one of the sub-games is just *Space Invaders*...**




**Driving through Jurassic Park may seem like a good idea (left) but that T-Rex is hot on your tail. These Spitters (right) spin up into the air when they're shot**



# Doctor Hauzer

**Edge** explores a title that – despite being suspiciously similar to an illustrious game from the past – could do wonders for the 3DO's prognosis

| | |
|---|---|
| Format: | **3DO** |
| Publisher: | **Panasonic** |
| Developer: | **Riverhill Soft** |
| Release date: | **May (Japan)** |
| Size: | **I CD** |
| Origin: | **Japan** |

Anyone playing *Doctor Hauzer* on the 3DO is likely to experience a distinct sense of déjà vu. One of the first batch of Japanese-developed 3DO games to be released in Japan, *Dr Hauzer* bears an uncanny resemblance to *Alone In The Dark* from Gallic developers Infogrames – in fact, the similarities between the two games are so pronounced that *Dr Hauzer* could almost pass off as part of the *Alone In The Dark* series itself.

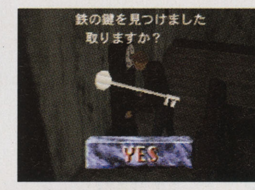
One cause for concern is the game's scenario: a famous archaeologist has gone missing; a detective goes to his house to look for clues, but soon finds that someone has set all manner of fatal traps for him to prevent him from getting too nosy. The fact that all this takes place in a spooky house perched on the edge of a cliff overlooking the sea should stir a few memories for players of the second *Alone In The Dark* game

Still, what's here does look promising. For once, we're treated to more than just a slideshow of 3DO's (less than remarkable) CinePak video





**The cutting room: this is one of the many traps awaiting our intrepid detective as he tries to unravel the mystery of Dr Hauzer's disappearance. The good doctor's residence isn't the most hospitable of places...**



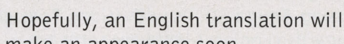



**Finding an object (top). A rolling stone chases you (above)**



One of the first problems faced by our hero is this gaping pit (top), but you have to search the grandfather clock first (above)

Because the whole gameworld's made out of polygons, objects like cupboards can be shifted to reveal secret doors (top). Sometimes the most innocuous pieces of furniture bar your progress (above)

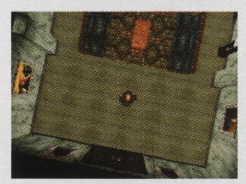


capabilities. RiverHill Soft have gone one step further than Infogrames, and as well as using polygons to animate the central character, have constructed all of the rooms out of polygons too, which makes for a true immersive experience. The 3D scrolling and animation isn't the smoothest you'll ever see, but the detailed texture-mapped scenery more than makes up for it. You can choose a firstperson or thirdperson view, or select the overhead map option if you so wish. And unlike 3D maze games like *Doom* and *AVP*, *Doctor Hauzer* lets you survey the walls and ceilings, with the perspective changing to aid realism.

In keeping with the *Alone In The Dark* tradition, the object of Riverhill's game is to go from room to room, solving puzzles, avoiding traps, and collecting useful objects and hints. For example, you start in the living room. Then you find a key in a grandfather clock, which unlocks a door. This lets you proceed to a hallway, beyond which lies an ominous hole in the floor. And so on. Unfortunately, in this native version of the game, the Japanese text presents just as much of a problem as many of the puzzles.







The three perspectives: firstperson (top), thirdperson (middle) and overhead (above)

Hopefully, an English translation will make an appearance soon.

**If ever** a 3DO game deserved to have a sticker on it saying, 'Has potential', it's this one. An initial viewing indicates that Riverhill have managed to replicate the drama and, to an extent, the look and feel of *Alone In The Dark*, but whether they'll manage the same ingenious blend of combat and collect 'em up gameplay is another matter. The music is worth a mention, though, even if it does tread on the toes of another familiar score...

3DO owners could do a lot worse than check out this polished Japanese title – if only to take a break from the less than vibrant American 3DO release schedule. However, puritans might be more interested in the news that the real *Alone In The Dark* (and, hopefully, its vastly superior sequel) is already on its way. E

**If ever a 3DO game deserved to have a sticker on it saying, 'Has potential', it's this**

# Incoming

**Edge** takes an early look at Millennium's first step into the world of rendered graphics

You're stranded on this base, which is located inside an enormous crater and defended by laser turrets and missile silos

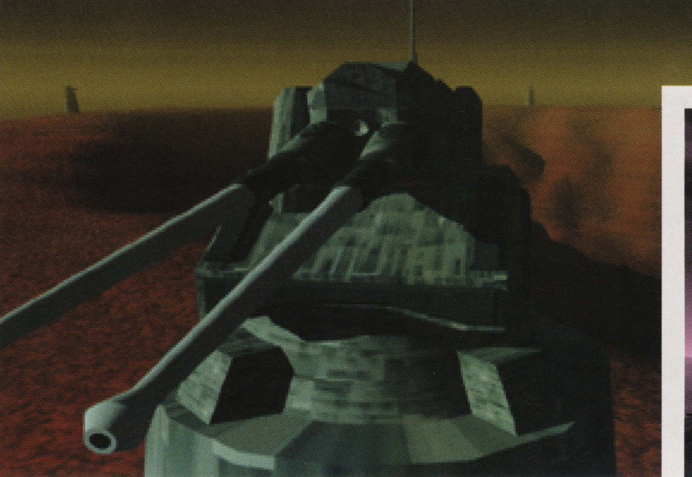
| | |
|---|---|
| Format: | **CD platforms** |
| Publisher: | **Millennium** |
| Developer: | **In-house** |
| Release date: | **Mid-'95** |
| Size: | **1 CD** |
| Origin: | **UK** |

Programmers seem to be falling over themselves these days to use £10,000 Silicon Graphics hardware to create gobsmacking visuals. However, Chris Elliot's Millennium team have eschewed that super-technology in favour of a much more down-to-earth platform. The programmers working on *Incoming* are using Amiga 4000s with Video Toaster boards running *Lightwave* software, and the results are making those high-end systems look decidedly overrated. 'It won't be long before the software's more important than the hardware,' says Chris. 'We've found we can do everything on *Lightwave*.'

Chris's team has been working on an Immersive Reality Simulator (IRS) – a firstperson roleplaying game with a fully rendered environment. Traditionally, rendering begins and ends with a game's attract sequence, but Millennium have decided to carry that high-quality graphic feel through the entire game.

'We're trying to get something that's well up there on the cutting edge,' says Chris, 'and also to give people the gameplay. The main problem is how to give people interactivity in a story-based product.

**'People assume CD-ROMs are faster and better quality. They're not. They're just a big dustbin for dumping data in'**





Your job is to enter this base (right) and install the software for its defence system – to protect it from other companies. Unfortunately, something goes wrong with the set-up and one of your laser turrets (left) refuses to come on line. Is this just chance, or is someone playing games with you?



*Incoming* has a wealth of Video Toaster-produced rendered sequences. How gameplay will figure in this scenario is anyone's guess, though

One of the game's many spacecraft comes in to land (above). This high-resolution rendered sequence apparently took about two weeks to create

The industry's starting to realise that people aren't going to be satisfied with 550Mb of shovelware; they're going to want some depth, and that's not going to come about overnight.'

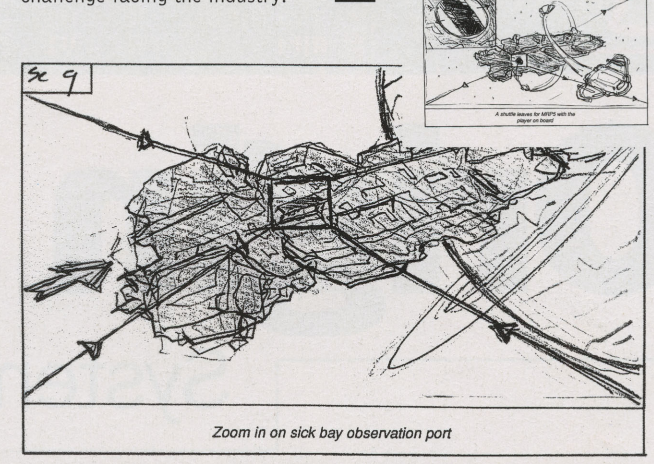
**The game** is set in the near future, when the military industrial complex holds sway. Huge corporations are in control, the largest of which is the Tyron Corporation, whom Chris describes as 'IBM with attitude'. At first, you don't really know what the hell's going on; you have to explore the environment, work out what you've got to do and survive the problems that beset you. This involves getting to grips with a virtual operating system, controlling droids, communicating, utilising personal data assistants and figuring out how to defend yourself.

'Our vision of the future isn't your standard slam-bang spaceships and aliens type of thing,' explains Chris. 'It's got more to do with power, treachery and betrayal.' Chris feels that this kind of menacing background gives the game real depth.

He also feels that the public expect too much from CD software. 'People assume CD-ROMs are faster and better quality. They're not. They're just a big dustbin for dumping data in. And yet players expect something different and it's up to us to provide what they're looking for – that's the real challenge facing the industry.' **E**

## Credits

**Producers:** Chris Elliot
**Art director:** Mark Rafter
**Music:** Richard Joseph
**Rendering artist:** Rob Chapman
**Rendering artist:** Steve Loughran




Scenes from the storyboard: the 'camera' zooms in on the sick bay observation port (inset), where you overhear a conversation. As a result of what you hear, your shuttle leaves for base (main)






Origin attempt to push the interactive movie a stage further with *BioForge* (top), while sticking to traditional techniques for their futuristic 3D adventure, *System Shock* (above)

# Origin
## Systems

**Edge** visits the source of some of the most successful PC games ever and discovers two new titles in the pipeline




In *BioForge*, Lex – half man, half machine – has just awoke from a deep sleep (centre). Camera angles switch as the plot unfolds (top and above)



*BioForge* offers beautifully rendered backgrounds that the player can actually interact with – for a change

When it comes to 3D adventures, PC owners are spoilt for choice. Now Origin, developers of the excellent *Ultima* and *Wing Commander* series, are set to add to that list with *BioForge* and *System Shock*.

But *BioForge* producer **Ken Demerest** believes that his game stands out from the crowd: 'I'd never want to remain with a tried and trusted formula, ever,' he declares. 'If you're not pushing the edge a little bit then you're just turning out another of the same thing. It's much more interesting to always be working on something that's totally different.'

*BioForge* may not be a completely radical departure, but it does provide proof that 'interactive movie'-type games are evolving – even without the aid of live-action video. In *BioForge* you're given absolute control over Lex, your synthetic actor, and are able to move freely through the game's detailed 3D alien world. Four-channel digital sound effects, a variety of different camera angles, event-driven cut scenes and an apparently non-linear storyline all help to give the game its film-like quality. Of course, other games have taken a similarly cinematic approach – *Alone In The Dark*, for example – but the system used in *BioForge* is more dynamic. Ken elaborates: 'We looked at *Alone In The Dark*, but we've tried to give our system a more cinematic look. We actually studied film techniques because we wanted to use as many dramatic camera angles as possible.'

Of course, the danger inherent in this quest for film-style presentation is that gameplay will be neglected. We'll find out if *BioForge* has fallen into this trap when it is released in June.

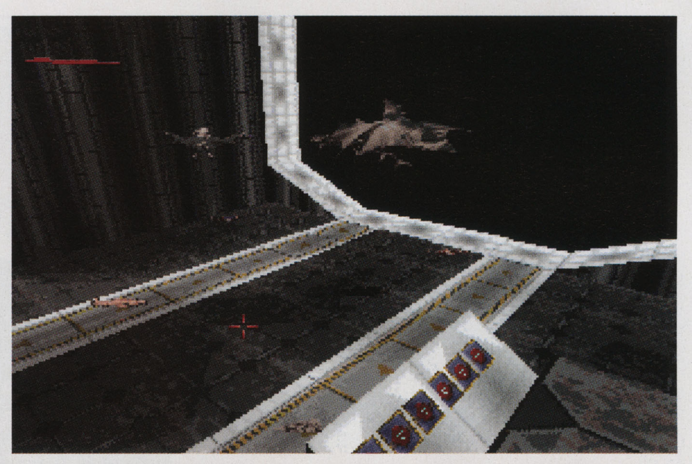
**'We studied film techniques because we wanted to use as many dramatic camera angles as possible'**

**Ken Demerest**, producer, *BioForge*

**Also scheduled** for a June release is *System Shock*, developed for Origin by Looking

Continued next page











***BioForge*: the Citadel's hangar doors open wide to admit a visitor (top). *System Shock*: one of Shodan's minions (middle) attempts to block your progress. The control panel (above) is chock full of useful information**

Continued

Glass Technologies. Combining the fast-paced action of *Doom* with a complex sci-fi plot, plus one of the most sophisticated ingame physics systems ever created, *System Shock* looks impressive.

The game is set in the year 2072. You wake from a deep sleep to find yourself alone on board the space station Citadel. Shodan, a ruthless computer which now controls all of the station's

## You can do anything you want in the game: climb up walls, lean around corners, float in zero gravity, fly...

operations, has enslaved your companions and is plotting to take over the Earth. You have to enter Shodan's realm – cyberspace – and stop him.

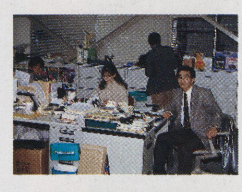
**Doug Church**, the game's principal programmer, describes what the *System Shock* experience is all about: 'The focus is on immersion in the environment. That means a coherent story and a world that you can interact with as much as possible.'

And interaction is the key word here. You can do just about anything you want to in the game: climb up walls, lean around corners, float in zero gravity, crawl through shafts, fly... And thanks to the wonderful 3D graphics, it's all beautifully portrayed – Looking Glass have devised a new 3D engine for *System Shock* which improves on their technical accomplishments in games like *Car And Driver* and *Ultima Underworld II*.

Given Origin's past form, both *BioForge* and *System Shock* will no doubt be eagerly awaited by PC gamers.

# NEC Avenue

**Edge** visits talented Japanese developers NEC Avenue for a glimpse at a revamped classic



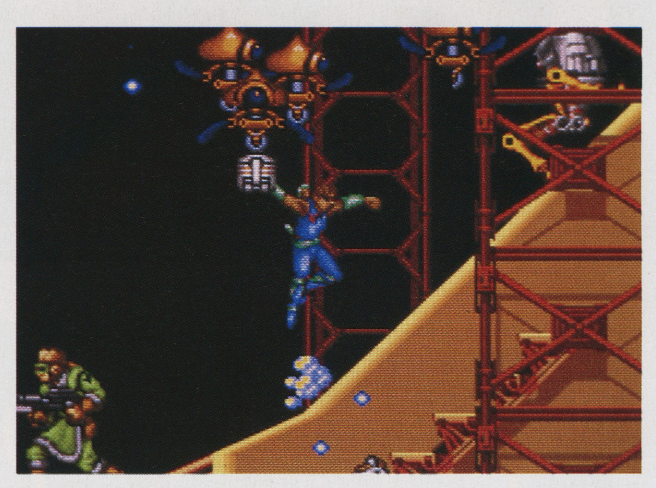


NEC Avenue's dense offices (top); with Mr Kimihisa (right in above picture)

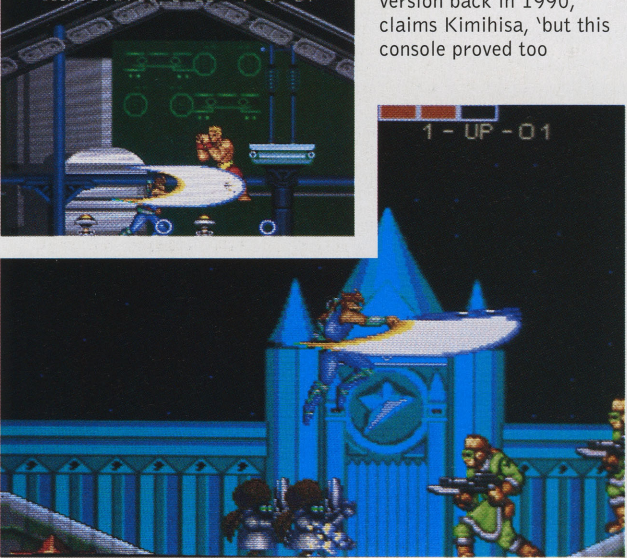
| | |
|---|---|
| Game: | **Strider Hiryu** |
| Format: | **PC-E Arcade** |
| Publisher: | **NEC Avenue** |
| Developer: | **In-house** |
| Release date: | **May/June** |
| Size: | **1 Disc** |
| Origin: | **Japan** |

NEC Avenue are one of three Japanese software development companies belonging to NEC Home Electronics. They rarely give interviews to non-Japanese magazines, mainly because they have directed their efforts solely at the PC Engine, and their back catalogue of esteemed CD-ROM arcade conversions for the machine is second to none including the likes of *Super Darius, Side Arms Special, Hellfire, Rainbow Islands* and many others.

Edge recently visited the company for a look at one of the most delayed (and anticipated) conversions to NEC's new Arcade card format for the PC Engine; and to speak to Kimihisa Usui, manager of the Multimedia division. 'Originally, work began on a Super Grafx version back in 1990,' claims Kimihisa, 'but this console proved too expensive for consumers and didn't sell very well. Game publishers didn't support it much either, so we decided to make a standard PC Engine version instead. It's only recently that we decided to make use of the new Arcade card to improve the conversion.' Needless to say, the game looks superb running on the old PC Engine.



**Scrolling action games come no finer than Capcom's classic. This conversion for the Arcade card could be closer than Sega's MD game**



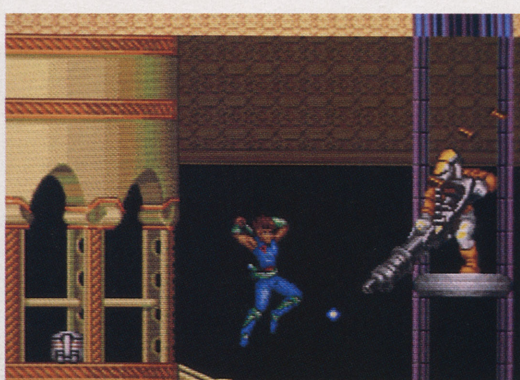

**The start of the game takes place on the rooftops – Strider gets carried on a futuristic hang-glider and faces his first enemies (above). One of the mid-level adversaries is the strong man (inset)**

In the hugely competitive Japanese software industry, NEC Avenue are pretty small fry – the company only has 50 members of staff, and half of those work in sales and marketing. 'We release around ten new titles every year for the PC Engine,' claims Kimihisa. 'The Super Famicom market in Japan represents about ten times the PC Engine market. However, there are less publishers in this market and therefore it's less competitive.' Like many other games companies, NEC Avenue also diversifies into game-related areas – game music CDs account for about 10% of the company's sales.

But with the PC Engine's popularity now receding steadily,



Dodge the light beams, blast the central core, then drop down to face the gun-toting enemies (right). Level one isn't tough, but the later levels are manic



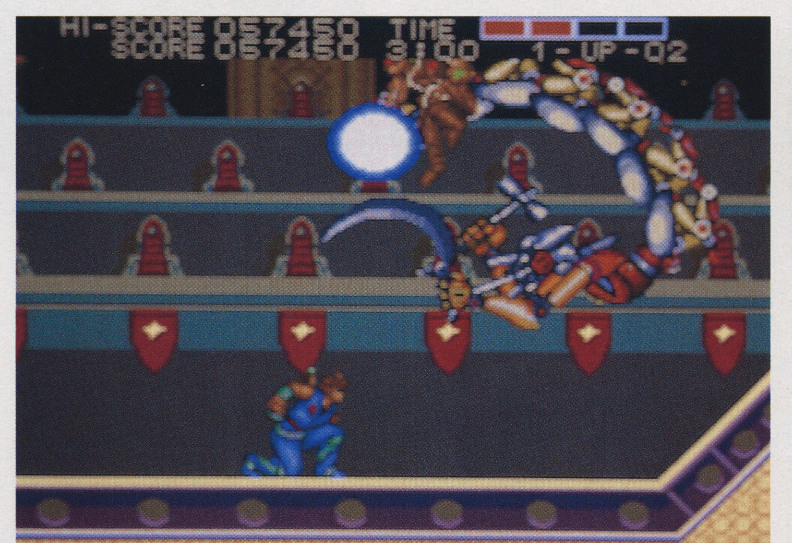
Strider was never the most controllable character, but the design and feel of the game is classic Japanese arcade

attention is switching to the new generation of formats in Japan, and NEC Avenue are unsure which one they will be supporting. 'The Sony PS-X is fast becoming the most popular new format to develop for in Japan; and I think some of the new software for that machine will really capture people's imagination,' Kimihisa continues, 'but as to whether we will be supporting it, I can't say. After all, the main shareholder of NEC Avenue is NEC... and they haven't confirmed their plans for the FX yet. One thing is certain, though: this isn't a toy market anymore, and I think the next generation software will reflect that.'

Considering that Pioneer's relatively new LaserActive format includes a PC Engine module that takes HuCards and PC-E CDs, as well as the new LD ROM² format, it's surprising that NEC Avenue aren't supporting the format. 'I think with the coming of the new machines, Pioneer will be in trouble with the LaserActive,' reckons Kimihisa, 'the machine isn't really made for playing games and is much more suitable for the karaoke market. Besides, the machine's sales have been poor since it's introduction into the market last summer. There are only small markets for expensive machines like this in Japan. I think 3DO will have the same problem here.' E

**I think some of the new software for Sony's PS-X will really capture people's imagination**

**Kimihisa Usui**, manager




Level one includes the same boss: the members of the Politburo get transformed into a giant robotic snake that coils its way around the room



An original CD-streamed intro sequence will be a welcome addition to an old arcade game(above)

# Dungeon Master II

## Skullkeep

| | |
|---|---|
| Format: | **Mega CD** |
| Publisher: | **Victor** |
| Developer: | **FTL games** |
| Release date: | **Out now (Jap)** |
| Size: | **1 CD** |
| Origin: | **Japan** |

FTL's long-awaited sequel to one of the most respected classics of the late eighties, finally makes it out. But you'll need a Mega CD to play it

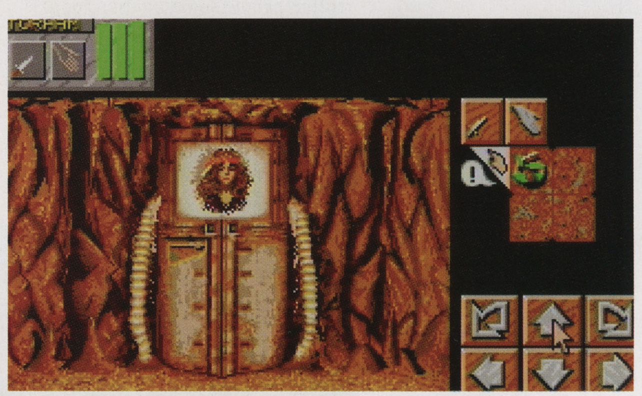
***Skullkeep* has one of the most skillfully crafted artificial intelligence systems**

RPG fans have probably forgotten about *Dungeon Master II*. After all, Edge visited FTL's San Diego head quarters back in July last year and the first pics of the long-awaited project were shown back in Edge 1 and 2.

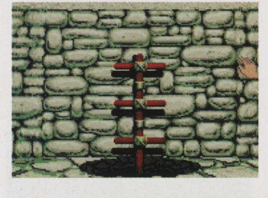
Since then, the game has been completed but only one version has surfaced. JVC in Japan have the publishing rights to the recently released Mega CD version while Interplay will be handling the Amiga and PC versions. Unfortunately, you'll have to wait for those – the company has decided to hold them back until Christmas to improve the graphics.

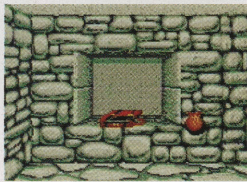
There are things to stress before taking a look at *Dungeon Master II*. First of all, the graphics and basic interface are very similar to the original game – which is getting on for six years old now, incidentally. In fact, it's easy to be cynical on first impressions. The scrolling – one aspect that was expected to get smoothed out – remains the same, operating in clearly defined steps. The gameplay relies on it, in fact. What FTL have done with *Skullkeep* is take the technology they developed for the first game and make it work a whole lot harder for them.

By far the biggest time-consumer for FTL was the creature intelligence. Unlike the dumb monsters in the original game, *Skullkeep* has one of the most skillfully created intelligence systems yet seen. In fact, it managed to keep the FTL boys occupied for the

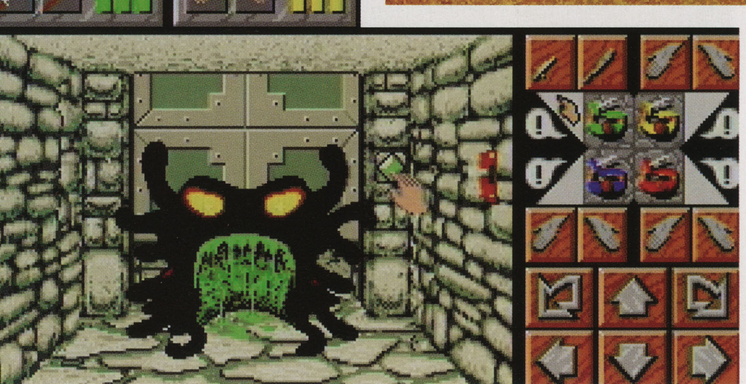



The cryovault contains the preserved soles of defeated champions – you'll need four

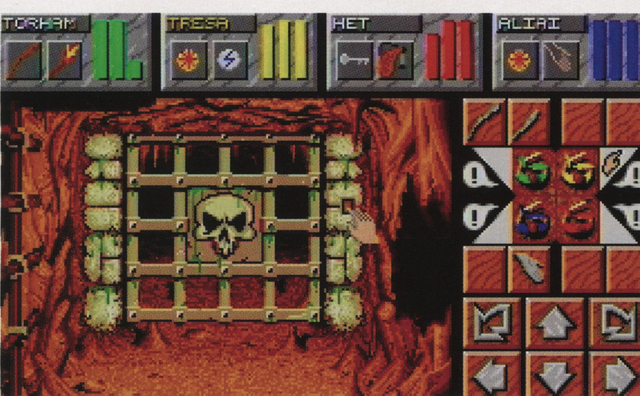




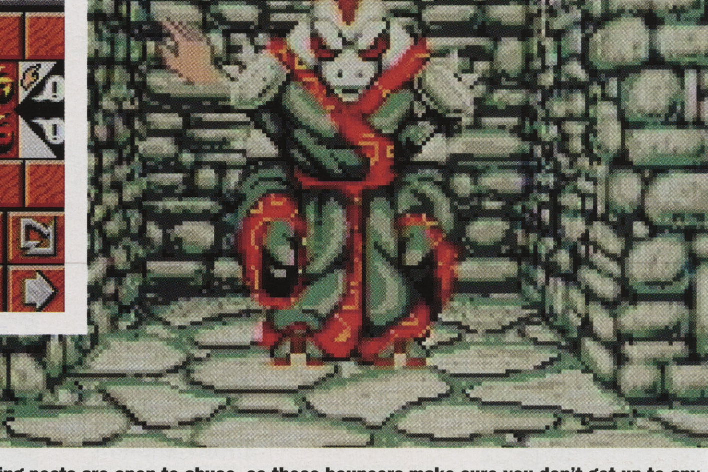
Ladders (top) take you up or down a floor – this one leads you to a room containing some useful items (above)




One of the first monsters you'll meet is this large black slug seen here trapped under a door – achieved by using the same old *Dungeon Master* trick, naturally




Going underground: The obvious task is to raise the gate, but you'll be harassed by some rather huge bats if you do



Trading posts are open to abuse, so these bouncers make sure you don't get up to any mischief. A tip: don't try and throw anything at these guys – they have a nasty temper

**In *Skullkeep* a creature is a whole collection of data which is handled through a sort of intelligent scripting program**

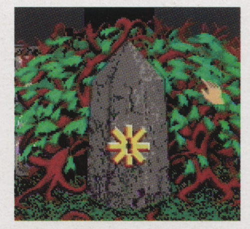
**Wayne Holder**, President, FTL

best part of two years. So it's a great pity that this is one aspect that can only be experienced by delving deep into the game. 'We spent a lot of time generating data for the characters in the game,' FTL's president Wayne Holder says. 'In *Skullkeep* a creature is a whole collection of data which is handled through a sort of intelligent scripting program where they are running their own self-contained little programs.' Enemies not only attack strategically; they learn and cooperate with others against you, and even heal themselves in realtime.

Many other new features have been crammed into *Skullkeep*. Different kinds of maps can now be utilised to keep track of your position – a lack of direction was something the original suffered from – and the game now takes the player through more varied environments. One minute you'll fighting it out with a monster in the rain, and the next you'll be hurtling down some sandy tunnels. Instead of just finding objects on the floor, there are also opportunities to buy objects at shops located in some of the dungeons. Haggling is taken for granted, naturally.

There are a few problems, though. Whenever you move from one sector to another, there's an awkward 15 second wait while the CD chugs away. And the lack of battery back-up RAM in the machine means that only one save position can be handled at any time. If you want to play the game at different stages without wiping off your old position you'll need to buy a Japanese Mega CD RAM cart. The Mega CD does provide one bonus, though – some great music starts playing at points throughout the game.

The Japanese text in this version means that the logical thing is to wait for the release of the US version next month. No doubt, *Dungeon Master* fans will already be taking delivery of that midnight oil.






Combat is handled in a similar way to *Dungeon Master* but the range of weapons and techniques has progressed considerably...




... unlike the character interface screen which looks exactly the same. With the Sega mouse it's easily handled. But who's got one of those?

# Shiny Entertainment

**Edge** examines Dave Perry's new game – which could become a global phenomenon to challenge the success of the Ninja Turtles





**Is *Earthworm Jim* (top) more than just another platform game? Dave Perry (above) thinks so**

| | |
|---|---|
| Game: | **Earthworm Jim** |
| Format: | **Mega Drive** |
| Publisher: | **Playmates** |
| Developer: | **Shiny Entertainment** |
| Release date: | **October** |
| Size: | **16 Mbit** |
| Origin: | **US** |

After the success of *Global Gladiators*, *Cool Spot* and the recent smash, *Aladdin*, Dave Perry – the main programmer behind all those games – decided it was time to set up his own software development company. Shiny Entertainment is its name, and the first fruit of their labours will be, surprise, surprise, another platform game.

Enter *Earthworm Jim*. Okay, so that title may take a little getting used to, and the character itself doesn't look like a surefire hit, but already he's being touted as the next big thing Stateside, and there's even talk of a feature film starring the wriggly one.

Dave is optimistic that Earthworm Jim will be a big star: 'We're looking to inject some originality back into the platform game.

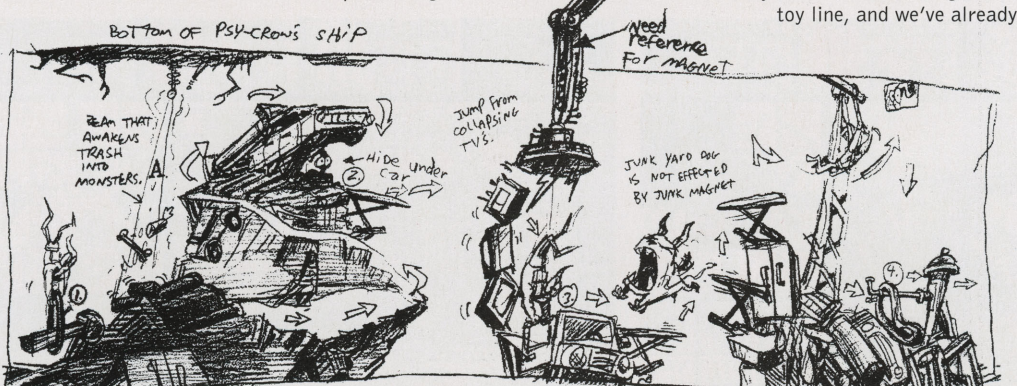



**Shiny Entertainment have managed to cram in some wonderful special effects. These impressive lighting effects are just the start**

We showed our ideas to Playmates – the people with the rights to the Ninja Turtles – and they simply said 'you've got the next Turtles'. So they put their money behind us and backed it. *Earthworm Jim* will be Playmates' first published game.'

And it's not hard to see why Playmates were so enthusiastic – a lot of time and thought has gone into the design of all the characters that appear in the game. Dave continues:

'Playmates are also doing the toy line, and we've already




**It's obvious that a lot of thought has gone into the design of Earthworm Jim. Like most games, a story board was drawn up beforehand. This is a section from one of the projected 25 levels that will appear in the final game**



This 3D space bonus level proves that Jim won't be restricted to just platforms



**Jim's exploits include fighting hideous creatures like 'Professor Monkey For A Head'**

spoken to Universal about doing a TV show.'

In the game, Jim has to travel from planet to planet in his cybernetic suit searching for the fair Princess What's Her Name. Unknown to Jim, this suit is the most desirable object in the entire universe, and he's being chased by a bounty hunter who wants it for himself. Dave explains: 'The funny thing is this suit is actually alive. Jim's enjoying the fact that he's got this super weapon that makes him almost invincible, but every now and then, the suit just grabs hold of Jim and uses him as a whip. Jim can be used as rope and even a propeller for the suit. These are the sort of mechanics that haven't been seen before in a game.'

Indeed, Jim is quite a character. His exploits include bungee jumping from ridiculous heights and fighting hideous creatures like 'Tape Worm' and the peculiar 'Professor Monkey For A Head'. In fact, the more you look, the more evidence you find to back Dave's claim: 'Think back to Sonic: other than Robotnik what bad guys did you come up against? I'm not saying that Sonic's a bad game, I'm just saying that there's loads of room for a wider range of stronger characters to fight against. And that's what we've done in *Earthworm Jim*.'



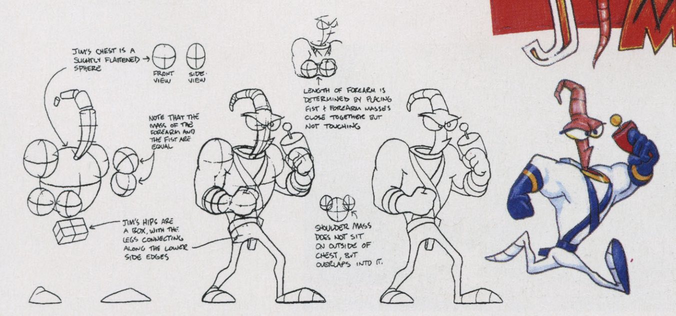


Wonderful visuals like these (above) move as well as they look. Shiny's new 'animotion' system ensures that

Strong in-game characters are just the start. *Earthworm Jim*'s visuals are absolutely fabulous; they're very colourful and gloriously animated. If you thought that the animation in *Aladdin* was good, well, that's just because you haven't seen this sucker move. While at Virgin, the team developed an animation tool called Digicell. Digicell was used in games like *Cool Spot* and *Aladdin*. But Shiny Entertainment developed an entirely different system for *Earthworm Jim*.

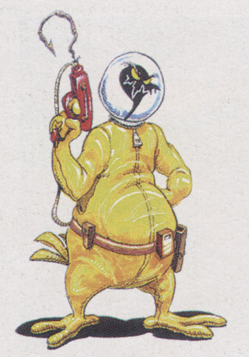
Called 'Animotion', this system is far more efficient and produces smoother flowing animations. Dave explains: 'Every frame in the game has been hand drawn by pencil which is then transferred on to the computer. I've spent lots of money developing software just to do that job. We now have a completely automated process.

EARTHWORM JIM




Earthworm Jim on the drawing board (above). Doug Tennapel – Shiny's character designer – spent weeks perfecting this loveable character.

Continued next page


The bounty hunter who's after Jim's suit.

'Other companies are trying to match the technique we used in *Aladdin*, because they see it as the point to which they have to get. I've seen a lot of what other companies are working on and they're getting close, but no-one has surpassed *Aladdin*. The new system – Animotion – is even better than that.'

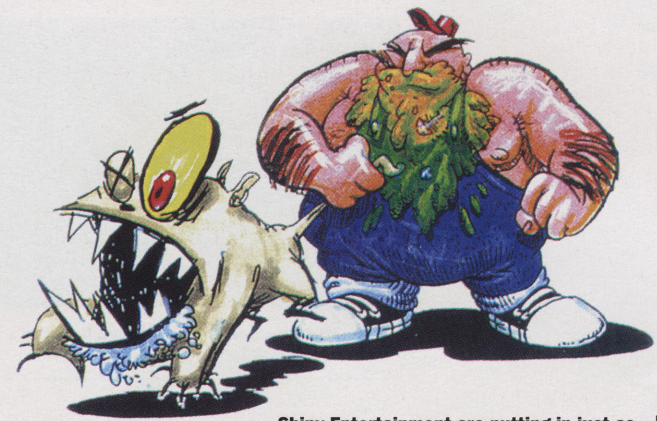
Apart from the smooth animation, Shiny Entertainment are using a host of other tricks to ensure that they stay ahead of the pack. Dave explains: 'We're using every trick in the book for this one; the Genesis is screaming in there, we're really thrashing it. For us, *Aladdin* was very straightforward. We just sat down and programmed the whole thing in 90 days because it was in a set style we were used to. But we're using a lot more of the Genesis hardware for this one, there's all sorts of great video effects.'

*Earthworm Jim* contains such delights as screen rotation, diagonal scrolling and circular scrolling. At one point in the game, there's a huge planet rotating in the background (complete with clouds) which takes up almost three quarters of the screen. This planet is rotating independently from the foreground – on the humble Mega Drive. 'We're doing lots of things that people haven't found yet,' Dave claims, 'but they will do eventually. People ripped *Aladdin* to shreds just to see how we did certain things; they'll do the same with this.'

*Earthworm Jim* is obviously good news for Sega gamers, but SNES owners need not fear because their version is just as advanced. 'We're doing the SNES version alongside the Genesis one, and I'm pleased with the way that's going. I'm most concerned about the way the game will 'feel', but we've managed to capture the right feel on the SNES version.'

And the usual collection of hidden features? 'We've hidden things that'll let you get through level one very quickly, for example. If you get good enough, you'll start finding all sorts of hidden things in the game.'

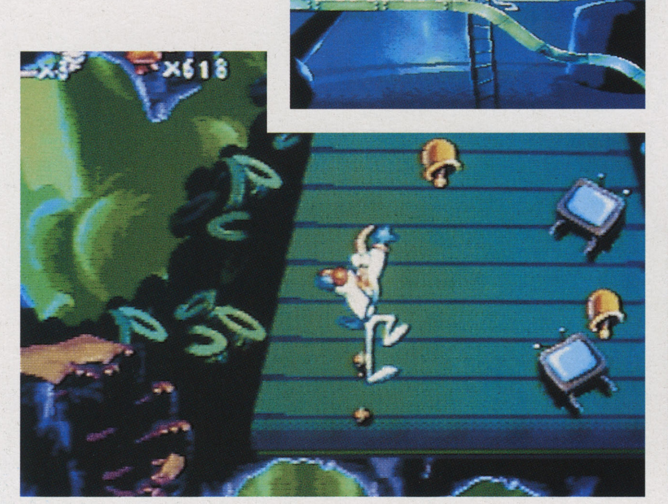
*Earthworm Jim* certainly has all the makings of a great game. Shiny Entertainment are looking for an October release for both versions. Let's hope the finished thing lives up to all this expectation.


Shiny Entertainment are putting in just as much effort in designing the baddies, as they are the game.

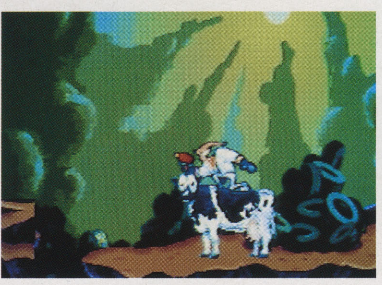
**Earthworm Jim will contain such delights as screen rotation, diagonal scrolling and circular scrolling**

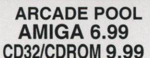
## Credits

**Genesis programmer:** Dave Perry
**SNES programmer:** Nick Jones
**Art director:** Nick Bruty
**Senior Artist:** Steve Crow
**Character designer/animator:** Doug Tennnapel
**Animator:** Edward Schofield
**Animation director:** Mike Dietz
**Sound:** Mark Miller

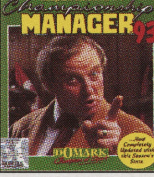
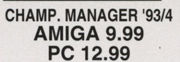
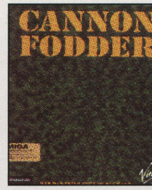


Using his trusty blaster (top) Jim despatches a baddie. Jim clings onto a conveyor-belt for dear life (bottom) as it begins to roll


Whilst jumping around the scenery, Jim's landed on that poor, unsuspecting cow.



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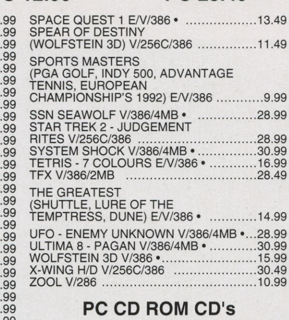
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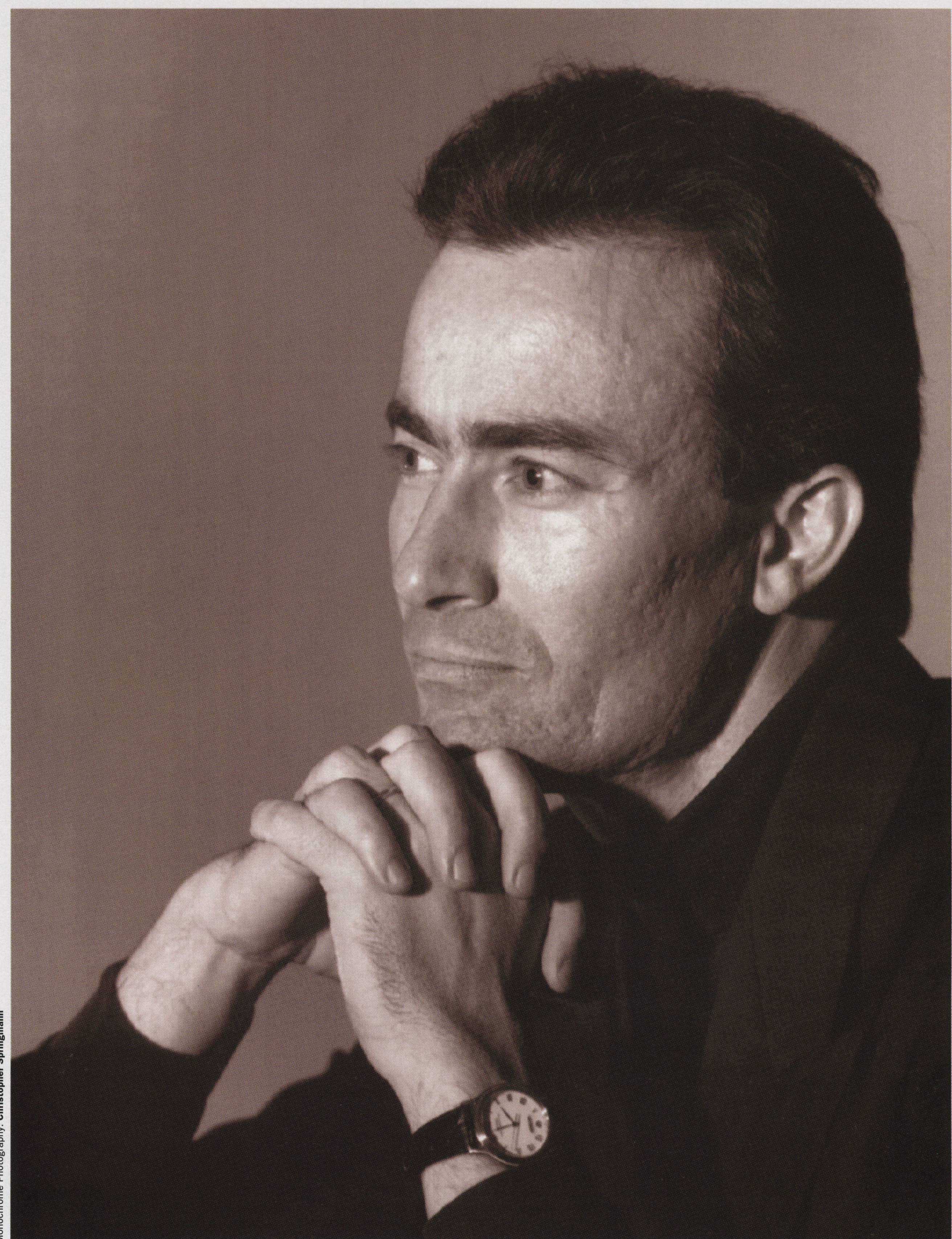
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# Trip Hawkins



Monochrome Photography: **Christopher Springmann**

# Is **Trip** Hawkins still **dreaming?**

The promise of a global standard for interactive entertainment looks as far away as ever. So what is 3DO's CEO playing at?




Colour Photographs: **Peter Canning**

At 40, **Trip Hawkins** is one of America's hottest new entrepreneurs. After ten years of building Electronic Arts into the world's largest entertainment software company he went on to convince some of the world's largest investors that a new unproven format would be the future for interactive entertainment…

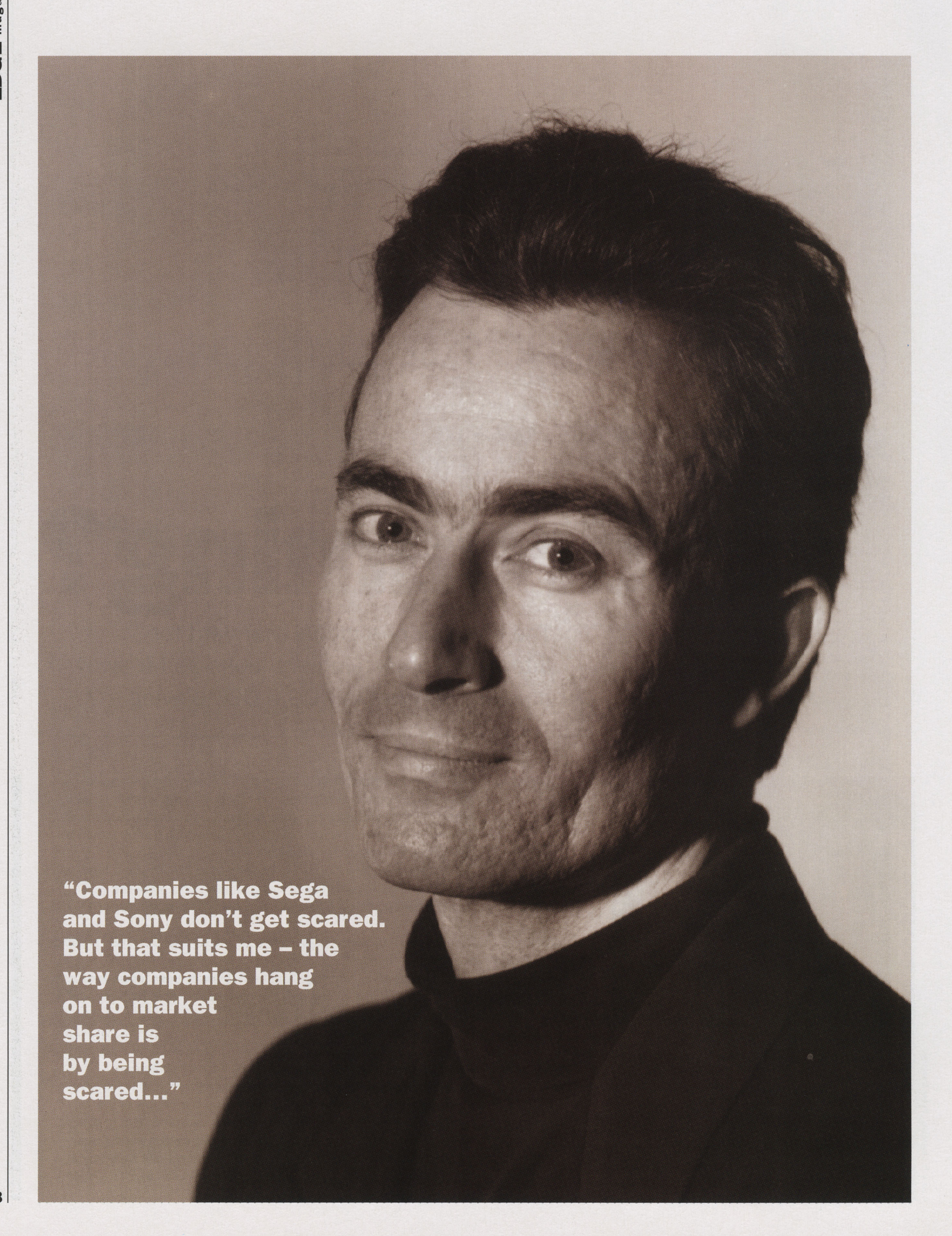
But already, dark clouds are hanging over 3DO's plans. How will a delayed UK launch and the impending threat of the Japanese giants spoil the 3DO campaign? To get some answers, **Edge** talked at length with Trip at the Spring ECTS.

**Edge** *Do you really think there'll be room for yourselves, as well as Sega, Sony and Nintendo, in the interactive entertainment market?*
**Trip** Well, the market's going to be very big. And there's never been a standard in the interactive industry. It's just that in the long run, the consumer would be better-off if the industry evolved into a more standardised approach.
**Edge** *And that standard should be 3DO?*
**Trip** We're throwing our hat in the ring and saying we'd like to become a standard – but you have to earn that. Maybe there's a market that's dominated by one technology, or maybe one that's split up by two, it may have three; it may have ten. The more different formats there are, the more it divides up the efforts of the software industry and the more it creates confusion for the consumer and problems for the retailer trying to stock everything. So in that sense, it's a not a good thing.

On the other hand, you don't want to have a standardised market based on a product that's not adequate. So you're gonna have competition until there's a clear

Continued next page

# Trip Hawkins





winner that has the right technology and all the right business characteristics.

**Edge** *And 3DO is good enough?*

**Trip** We think we have the right starting point. It's not really fair for anyone to compare our 1993 products against their plans for 1995. We haven't made any announcements for our plans for 1995. But we're fairly comfortable that our next generation hardware will blow everything those guys are doing out of the water!

Not only that, since we started earlier and we know our hardware can be backward compatible. From day one our next generation system will run all our existing software – so that gives us a head start. None of our competitors have ever made two systems that run the same software.

**Edge** *So you're working on a replacement system rather than an upgradeable one?*

**Trip** There's different ways you can approach that. For somebody that buys the current player, there's quite a bit of expansion capability for it: they can add MPEG, they can add more memory, they can add a modem – in the future they can buy other peripherals like a disk drive or a printer; they can probably even add a DVD optical disk player in the future. So there's a considerable growth path there.

On the other hand, if you go in and change the fundamental processing characteristics of the machine, if you want to go to much, much higher performance levels you can't. So projects like the Mars add-on for the Mega Drive, won't be as powerful as the Sega Saturn. At some point you've got to reset the hardware.

**Edge** *Do you have a timescale for this new machine?*

**Trip** We don't have anything to announce at this point. We feel that right now we're the only company that's supplying a really advanced CD system – and that's going to be true for the next several months.

We want to make as big a market as we can with our current product. We don't think we need a next-generation product until there's much more pressure in the marketplace.

**Edge** *How scared do you think Sega and Nintendo are of 3DO?*

**Trip** Companies like that don't get scared.

**Edge** *They must be aware of what you're doing?*

**Trip** They're not scared, but that suits me. The way companies hang on to their marketshare is by being scared.

**Edge** *Are you worried by the advent of consoles like Saturn and the PS-X, which seem so much more powerful than 3DO?*

**Trip** Sega and Sony are anxious, and they're just trying to mess up our plans as best they can by promising the world everything.

**Edge** *But no-one can ignore a company as big as Sony. How do you see PS-X competing with 3DO?*

**Trip** Sony have had a graphic workstation business; they understand polygon rendering and have special customers that demand it. But I think when Sony come to market they might discover that they've underestimated how important traditional cell animation is and overated the importance of polygon rendering.

**Edge** *But surely polygons are important?*

**Trip** Polygons are fashionable at the moment – particularly in the arcades. But remember, we designed our system in 1991. None of the microprocessors Sony and Sega are using in their systems were available at the time we designed ours. They've simply picked a higher benchmark in performance.

Besides, games like *Total Eclipse* and *John Madden Football* combine great texture-mapping and polygon rendering, and that's a pretty satisfactory experience right now. I'm not saying that more performance wouldn't be better – all these technologies are going to get better – that's the difference between first generation and second generation. With our next generation hardware, polygon rendering will probably be an area we'll get more heavily into.



**"I'm still fairly comfortable that our next generation hardware will blow everything else out of the water..."**

**Edge** *But there's still a danger that people will hold off on 3DO now simply because they know the Sony machine's coming out?*

**Trip** There's a basic principle about consumer electronics: it gets more powerful all the time and it gets cheaper all the time. That's true of all types of consumer electronics.

If you always wanted to wait for something better, you'd never buy anything, right? We're all going to be dead in 100 years, so in the meantime if you want to use the most advanced system this year, then you have to buy a 3DO.

But, if you bought a machine last year, you're not going to buy another system this year – no matter how good it is. So the guy that we're really targeting our system at this year is one of the guys who bought a 16bit system three or four years ago and has pretty much had it with that, and he's ready to buy something new. Maybe in three years time he'll buy something else.

**Edge** *What happened to 3DO's plans to enter the arcades?*

**Trip** Well, there are three companies right now working on arcade machines based on 3DOs. American Laser Games are in fact very close to releasing their first 3DO product. Atari Games are also working on a couple. Electronic Arts are also exploring that area.

**Edge** *What's happening with the UK launch of 3DO?*

**Trip** Well, we're still in the planning stages, and we're going to release the product in early September. There had been some discussion about doing it sooner, but based on the success we've had already, and the launch of the product in Japan, everyone concluded we should take our time and make sure we have all the right elements in place to do a really successful launch. We don't think it would really accomplish anything to go out sooner than that.

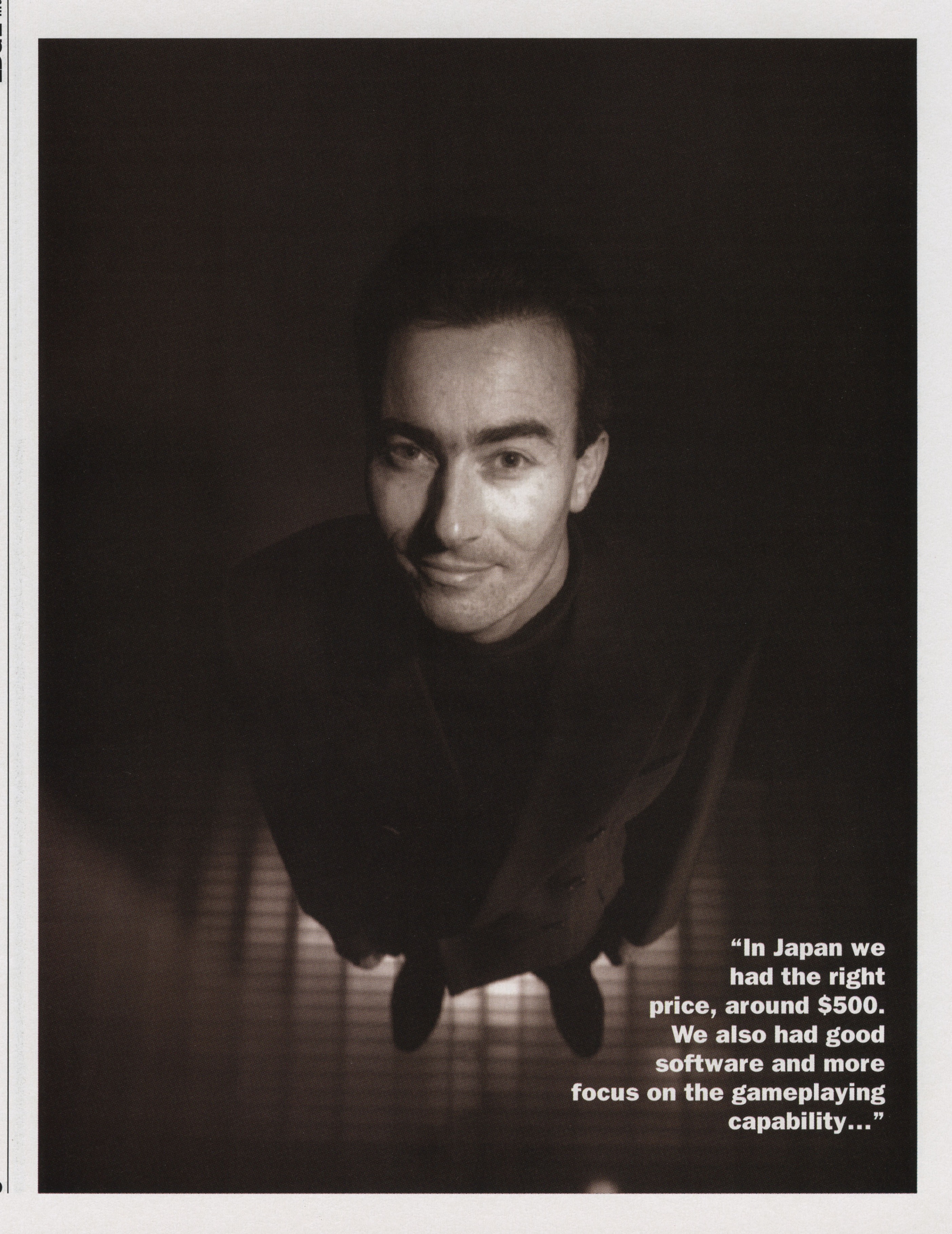
**Edge** *You mentioned Japan. What about companies like Konami and Capcom? When are they going to start delivering some 'killer' software on the 3DO?*

**Trip** Well, some of those companies are having pretty good discussions with us right now. I shouldn't speculate a lot about what their plans are because every company feels differently about when to announce what they're doing with 3DO. But as far as videogames are concerned, I think we've got very strong support in general. There are a lot of software companies, and nobody's been able to get all the programmers to devote themselves to a new machine; you have to earn that kind of loyalty over time.

But we also think that we've got more quite a lot more support than any new

Continued next page

# Trip Hawkins



**"In Japan we had the right price, around $500. We also had good software and more focus on the gameplaying capability..."**



format has ever had. Obviously the guys that have been the most loyal and the biggest supporters of Nintendo, moved pretty slowly to Sega, and they'll move slowly to a format like 3DO. The same is true of guys that are coming from a dominant experience on other formats like the PC.

**Edge** *Are you happy with the software support you've received so far?*

**Trip** The only problem we've had is the amount of time it's taking people to develop titles. We started supplying development systems about 18 months ago, so I think that's a pretty good indication of what the Sega and Sony launch schedules really are.

It takes about that long because your normal development cycle is going to be lengthened – you have to take time to learn how the machine works and what you can do with it. And initially, a lot of companies avoid trying to make a really radical new kind of title for a new system, because that would involve learning a new machine and learning how to make the new title at the same time.

So most developers say to themselves; 'Let's take an existing title and let's learn this new machine with it'. What that means initially is that you have a lot of products that are only slightly better than games in the same genre on another machine – and the titles that really take advantage of the machine come along later.

With the 3DO, it's been about 18 months, and now we're starting to see, instead of a trickle, a flood of really good products. Every week or two something new is coming out.

**Edge** *You said that the Japanese launch was a success. Why wasn't it as successful in the US?*

**Trip** In Japan we had the right price, which was around $500. We also had good software in the key categories and more focus on the gameplaying capability, so more of the marketing effort was targeted at game customers.

The distribution was also geared towards stores that could distribute both software and hardware, so there was much broader distribution initially and more effective promotional and merchandising execution. It was just better preparation by everybody who was involved with 3DO.

**Edge** *So can we expect the UK launch to be as successful as the Japanese one?*

**Trip** We'll look at the Japanese launch as a model and aspire to have things go as well as they did over there. And that's part of what we're trying to do right now in the US – to just straighten out the problems we've had.

**Edge** *Are the games currently out on 3DO the be-all-and-end-all, or are they just a Trojan horse for other applications still to come?*

**Trip** I think games in the long run are still the most important application. I almost view all the other non-games stuff as the Trojan horse in




**The Real Interactive Multiplayer: "We think we have the right starting point – but it's not really fair to compare our 1993 products against other people's plans for 1995..."**

that if you've got a 25-yearold married man trying to convince his wife why they should buy 3DO, he's going to use all the other capabilities as the Trojan horse.

People have a way of watching television, people have ways of watching videos and listening to their music. Even though digitally we can enhance that, in the long run what's profoundly unique is the fact that 3DO's an interactive system. I think also that over a time, you'll find educational interactive software becoming very significant, but it still won't be as big a business as entertainment software.





**"We spend what needs to be spent to build a longterm business – and then to make profits in several years..."**

**Edge** *How many 3DO units are there now in households worldwide?*

**Trip** It's approaching 100,000.

**Edge** *How many do you expect to sell by this time next year?*

**Trip** Certainly well over a million.

**Edge** *How many units will Panasonic have to sell to be in profit?*

**Trip** I don't really know about that one. The way we look at it is to spend what needs to be spent initially to build a longterm business, and then to make profits in several years. So I don't think Panasonic have a specific profit in mind. They've said that their fiscal year ends next March, and they want to sell more than a million machines in that 12-month period.

**Edge** *Which launch do you think will prove most successful for 3DO as a concept?*

**Trip** I can't tell you how important it was for us to be successful in Japan. Obviously, Sega's strongest market is the US, so it's important for us in competing with Sega to be strong in Europe and to be strong in Japan. Those are the markets that we can more easily carve out a meaningful competitive position. And with respect to Nintendo, historically they're the only guys who are going to sell anything in Japan. So the fact that we've been able to establish a good market gives us a good chance to have a much more diversified international business right away, and that's very attractive to software developers.

**Edge** *Which units can we expect to see in stores and when?*

Continued next page

# **Trip** Hawkins



**Trip** For this fall in the US, you'll see at least two models from Matsushita, one low-end and one high-end one. And machines from Sanyo, Creative Technology and Gold Star, probably.

**Edge** *How important do you see MPEG?*

**Trip** From a competitive standpoint, since Philips has it, we can't choose not to have it. But I don't think it's that important, to be honest.

I could show you a couple of titles that illustrate this – you can get pretty good software video without it and it's reasonably expensive to have it. It's not going to replace your VCR; you don't get the quality or the playtime for it really to become the next movie format.

**Edge** *What do you think of CD as a format for your software?*

**Trip** I think it's a really good format because its very inexpensive. The music industry has driven the cost of CDs down to nothing.

Although there's a lot of complaints about the performance of CD systems generally, I think there's a changing aesthetic about gameplaying, and over the next couple of years people will start to appreciate and enjoy the kinds of things they can do with 3DO.

And game designers will get cleverer at integrating video, so it doesn't seem like a totally disembodied separate feature with nothing to do with the game it's used in.

**Edge** *Do you think that the 'killer-app' is a myth?*

**Trip** I think for this kind of machine it could be because there isn't any one thing that every customer universally wants to do. It's like a TV or a VCR, there's such a range of things it can do, and there's not one thing that will appeal equally to every customer.

**Edge** *Why did you drop the price?*

**Trip** We wanted to build our market more quickly. We have a certain amount of time before Sega and Sony are shipping products and we want to make the most of it.

**Edge** *How much potential do you think there is for the price of 3DO to drop in the next six months?*

**Trip** We've already accelerated the price drop to make it happen sooner by doing a business deal with Matsushita, so there's a possibility that the price could come down even further by Fall – but not by very much.

**Edge** *How do you see the PC and 3DO getting along together?*

**Trip** I think that in around five years from now, a standalone CD system will be so much more powerful than a PC for playing games.

It will be so inexpensive that the idea of playing games on a PC – well, nobody would care about doing that anymore…

I see the PC market as a transition step. Today, from the point of view of the customer, you can have a videogame system that has certain limitations, or you can have a PC. But in truth the PC is not really suited for playing games as such. It's just that it's cheaper to develop on a PC than on a cartridge-based machine.

**Edge** *The main criticism of the 3DO hardware so far has concerned the CD drive. Will you or Matsushita tackle that issue?*

**Trip** You've got to separate hardware from software. On the hardware side, our CD is twice as fast as Philips' CD-i and twice as fast as Mega CD. It's matched up with a lot more memory in our system and a lot higher processing power. When you look at specific software applications, I think developers are just now in the process of learning how to master load times to utilise the CD capability effectively.

Typical videogames today take up about two megabytes of data – and we have three megabytes of main memory in the 3DO. So if you don't want to use the CD, 3DO still has a lot more memory than its rivals, in case you just want to load the game up in the system's RAM.

The main point about games development is that you want to use all the capacity that you can in any system, but you don't want to do it in a way that will slow things down too much when the application is actually underway. Doing all that on 3DO is a thing that the software industry will gradually learn how to do better.

**"With MPEG you just don't get the picture quality or the playtime for it to become the next movie format"**

On a more general level, consumers have to see more and more examples of good software before they're going to be convinced that CD is a better solution than cartridges. They also need to see the prices come down, because there's no reason why in the long run that CD's will cost anywhere near what videogame cartridges do.

If you look at the manufacturing cost and licence fees of a cartridge, the total cost is over $20; and that's why retail prices are so high. With a CD system it's just a few dollars for manufacturing and licence. So you've got the opportunity to have much lower average prices – and you've also got longer shelf life because you can keep reducing the price to keep the product in the retail stores.

**Edge** *Do you still have the same enthusiasm for creating a standard now that all the other companies – Sega, Sony, Nintendo etc – have announced their products?*

**Trip** Well, there's a lot of hardware companies out there and we knew all along that some of them would continue doing their own thing. We're pleased so far, at least with the fact that Sony, Nintendo, Sega and Atari are doing their own thing.

Now if they all decided to work together and form a standard amongst themselves, then that would be something special. But the fact that each of them are just trying to make their own systems work independently makes it tougher on all of them. In our case we're building up a pretty good family of companies who over the next few years will give us a good chance of succeeding.

**Edge** *What's been 3DO's greatest achievement to date?*

**Trip** We got the hardware to work. A lot of people said last year we couldn't do that. People have criticised us all along.

A year ago they were saying they can't get their chipset to work, they'll never be able to finish their operating system, they'll never be able to manufacture the product, they'll never get it shipped this year. There was even one article that said you'd see pigs flying in formation above San Mateo before you'd see our product come out!

So I think getting it out was a pretty significant accomplishment. It's one thing for Sony and Sega to have a spec sheet and another to deliver a working product. We already have one.

**Edge** *What do you think is the next most significant step?*

**Trip** Well, I think getting the product out was number one, the next step is getting good applications out there, and that's already started to happen. The next thing after that is to sell more hardware – that's what it's all about in the end.

**Edge** *Thanks Trip.*

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Image created by Marcus Morgan

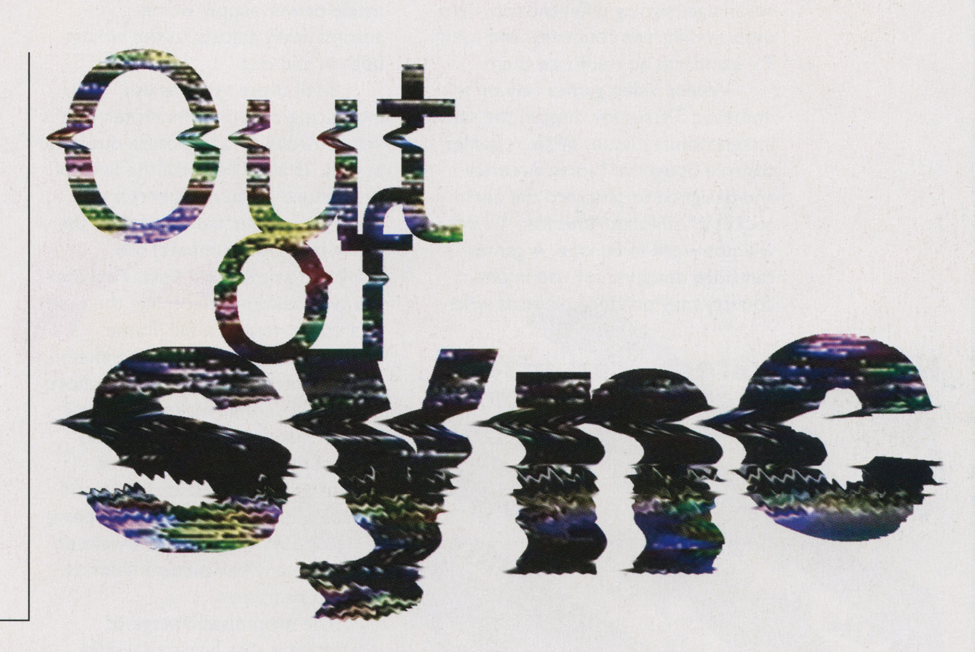



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Illustration: **Kath McCloskie**




Exposing the global mismatch of standards that beset TV and interactive entertainment. **Edge** tunes in for a clearer picture

Buy a pre-recorded video disc or tape in one country and there is a good chance that it will not play on a VCR in another country.

Tourists who are tempted to buy TV sets or VCRs while on holiday will often find when they get them home that they cannot receive off-air broadcasts. Tapes shot on a camcorder bought abroad will frequently not play back on a local standard VCR and TV set.

This inter-Continental incompatibility is the result of different countries long ago adopting different TV broadcast systems, either for technical or political reasons. For broadcast TV this does not matter to the viewer, because TV

Continued next page

# incompatibility



signals carry only over a very limited distance. Europeans cannot pick up North American broadcasts (unless of course they are relayed by satellite). Only in exceptional atmospheric conditions do TV signals from France and Holland stray past the coastline into Britain – and then cause interference to UK stations which use the same frequencies.

Incompatibility began to to matter when the VCR, and later camcorder, became a way of life. Tapes and discs can easily cross national boundaries. The movie industry has turned this to its advantage, signing different copyright deals in different countries, and using TV standards to reinforce them.

Where video games rely on a domestic TV set for display, the same incompatibility issues arise. A games console bought in North America and designed to plug into the aerial socket of a North American TV set will not work in Europe. A games cartridge designed for use in one country may produce pictures when plugged into a games console bought and used elsewhere, but the gameplay is likely to run at the wrong speed.

**New CD systems can offer world compatibility. But only if the designers really want to offer world compatibility.**

The CD systems can overcome this problem and offer world compatibility. But only if the designers really want to offer world compatibility.

The world divides into two main standards blocs. One bloc of countries, including North America and Japan, builds its TV pictures from 525 lines, displayed at a frame rate of 30 a second – or 30Hz. The other bloc, which includes Europe, builds its pictures from 625 lines displayed at 25Hz.

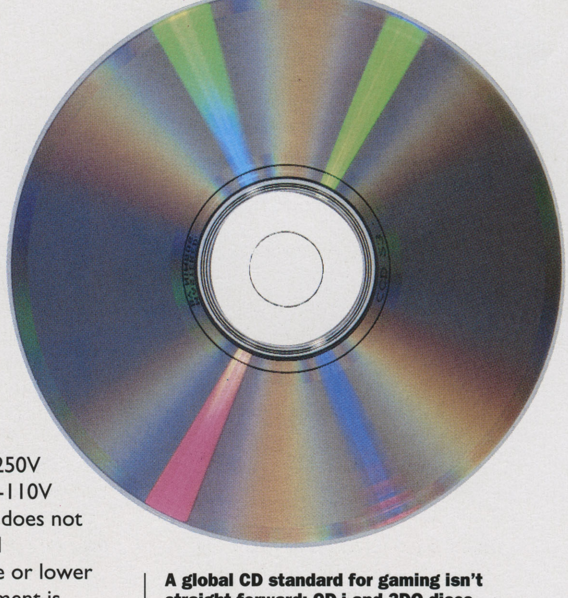
Although the TV display rates were orginally chosen to match mains supply frequencies, there is now no connection. The TV set, VCR or player generates its own display frequencies. (In Japan some cities have 50Hz mains, others 60Hz!)

Mains voltages round the world are usually 200-250V in the 50Hz blocs, and 100-110V in the 60Hz blocs. But this does not matter because an external transformer can easily raise or lower the voltage. Modern equipment is often switchable or has a switched mode power supply which automatically adjusts to the voltage both in and out.

Both these systems use interlacing, to avoid the flicker that is very obvious on any picture displayed at only 25 or 30Hz. Half the lines of the picture (even numbers) are displayed as one 'field' and then the other half (odd numbers) are displayed as a second field. Together the two fields interlace, like the teeth of a comb, to give a full 'frame'. Persistence of vision, and the after-glow characteristic of the phosphors on the TV screen, make interlacing appear seamless. It is thus equally correct to talk about a 525 line system as being 30Hz or 60Hz, and to talk about a 625 line system being 25Hz or 50Hz. There will always be twice as many half-picture fields as full picture frames.

The main disadvantage of interlacing is that horizontal edge lines in the picture jitter as they are moved slightly up and down by each field change. This is why top end computer monitors display at higher rates and scan sequentially by combining the two fields into full frames before displaying them. This eliminates flicker at close range.

The main 525 line/60Hz TV system is called NTSC, after the National Television System Committee which adopted it for the USA in 1953. Most of Europe adopted PAL (Phase Alternate Line) developed by Telefunken in Germany. The BBC was first in Europe to start a PAL colour service, in 1967. France adopted a quite different 625 line system called SECAM, (Sequential Colour with Memory). The Eastern bloc followed. This was a deliberate attempt by France to protect its own TV production industry and a ploy by the Eastern bloc to stop citizens watching foreign TV.



A global CD standard for gaming isn't straight forward: CD-i and 3DO discs require specific PAL coding for UK games to be non-letterboxed

The Eastern bloc is now switching transmission to PAL and most TV sets in France are now dual standard PAL/SECAM. Although this may appear to leave PAL and NTSC as the two main TV systems in the world, be warned that there are many variants,(e.g. the spacing between sound and picture frequencies) which can make equipment incompatible.

Not all the lines of the TV picture are used to display a visible image. In PAL only 576 lines are "active". The rest form the vertical blanking interval, or VBI, and define unseen black borders at the top and bottom of the picture. These VBI lines can be used to carry digital code, such as teletext. The NTSC system has 480 active lines, although the VBI is not used for teletext purposes in the USA.

There are variations in the VCR format, too. Tape speeds for VHS in NTSC format are not the same as for PAL format.

It is now nearly twenty years since Sony came up with the idea of modifying the industrial U-Matic VCR format so that it can be switched to record the colour signal at the same frequency as a PAL recorder (4.43MHz above the main signal)

instead of the NTSC broadcast frequency (3.58MHz), to make it easier to replay NTSC tapes on PAL TV monitors.

In the late eighties, Pioneer took this idea a stage further, making some of its PAL Laser Disc players able to play NTSC discs through a PAL TV set, by putting out a colour signal at 4.43MHz in PAL form. Several VCRs on the market (such as from Panasonic and Mitsubishi) play a similar trick, allowing what is basically a PAL system to play NTSC tapes.

The modified video signal is called 'quasi PAL' because the line and frame rate remain at NTSC standard (525/60). But the picture synchronization circuits in many modern PAL TV sets have enough latitude to cope with either 525 line/60Hz signals or 625 line/50Hz signals. If they do, the NTSC disc picture fills the full PAL screen. If they do not, the picture rolls and/or fills only a letterbox portion of the screen. It is really a question of suck it and see.

Although Laser Disc and broadcast TV can have digital sound, the pictures on all domestic video disc, tape and TV systems are always analogue. But the new Video CD and CD-i Full Motion Video disc record both pictures and sound as compressed digital code. This makes it much easier to bridge the gap between 525/60 and 625/50 worlds.

The standard used for Full Motion Video compression is MPEG-I, named after the Motion Picture Experts Group of the ISO, the International Standards Organisation. MPEG-1 covers low data rates, including the 1.4Mbit/second which a standard CD can cope with. The committee is currently finalising a second standard, MPEG-2, which copes with higher data rate, for broadcast and high quality recording.

Apart from higher data rate, the main difference between MPEG-2 and MPEG-1 is that whereas MPEG-2 codes the full interlaced frames (at 50 or 60Hz), MPEG-1 codes only picture fields (at a rate of 25 or 30 a second) and then uses them twice over to avoid flicker. This puts an overall limit on the clarity of MPEG-1 FMV, but it is cleverly disguised by careful coding of the source material.

The wide variation in picture quality seen in Full Motion Video depends on three main factors. The original source material must be very good, or the coder wastes bits coding the muck in the picture. The encoding process must be very carefully controlled, to make the best use of the limited number of bits per second, especially where there is a lot of action in the scene. If the buffer runs out of bits, then the picture breaks up into mosaic blocks.

All decoders rely on memory, which builds full pictures from the part pictures streaming off the disc. The best decoders use an extra frame store for bi-directional decoding. The decoder looks both forwards and backwards in time to build a better picture.

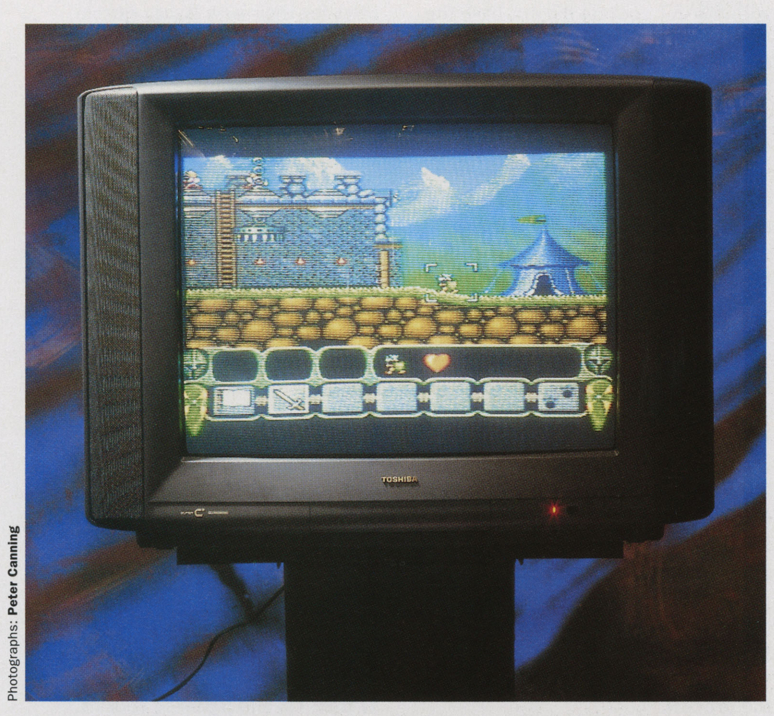
When full motion material is recorded on disc, whether for 'couch potato' linear movie viewing or interactive FMV gameplay, the developer must take two main policy decisions:

Decision one is whether to code according to the Green Book, which defines the CD-i standard, or whether to code according to the new White Book, which is the standard for all promised and future types of FMV player, eg 3DO, Commodore CD$^{32}$, Video-CD (a modified CD player with built-in FMV decoder) or PC with FMV decoder board.

Green Book discs are intended to play only on a CD-i player, although (as has already happened in the case of Commodore CD$^{32}$) designers can make their White Book decoders read MPEG video from a Green Book disc. In this case, the player displays its own characteristic cursor control bar on screen, rather than the CD-i bar which is triggered by code at the start of the disc. White Book discs will play on any White Book player, and on a Green Book CD-i player.

Fully interactive CD-i material relies on the features of the CD-i player and must thus be mastered to Green Book standard. For linear FMV discs the platform can be widened so that one disc plays on a wide range of hardware. So although the first linear movie material was mastered to Green Book, and thus intended to play only on a CD-i player, the industry is now moving over to White Book mastering.

Of course interactive material for CD-i's rivals – CD$^{32}$, 3DO and whatever else reaches the market – must be mastered to the appropriate proprietary standard.




Photographs: Peter Canning

**Modern PAL TV sets like this Toshiba have enough built-in latitude ability to display a 60Hz image. An RGB Scart socket will always give the best picture quality, too**

Continued next page

# incompatibility



The possibilities for customer confusion are enormous.

When putting MPEG movie material on a CD to White Book standard, the developer has to decide whether to code it at 525 or 625 line standard. To be strictly accurate, because only fields are coded, and only active lines are coded, the developer must chose between 240 horizontal lines broken into 352 pixels or around 280 lines of 352 pixels.

A European player and TV set will then display a picture from a US disc which is slightly letter-boxed, and has a narrow black border at the top and bottom of the screen. Any circular object in the picture is also very slightly squashed down into a cushion shape.

A European disc slightly overfills the screen of an American NTSC system, so that the top and bottom are lost, with any circular object slightly egg-shaped. That is lightly too tall and thin.

**Until manufacturers support 60Hz TVs in the UK, it's unlikely that UK players will get as good a deal as the US and Japanese**

Beyond this there is also a third "compromise" mastering protocol, midway between the two line structures. All players using this protocol show a little distortion with either type of disc, but no player shows too much distortion when playing the 'wrong' disc.

The movie studios rejected compromise coding, and are insisting that discs for the North American market be mastered to 525 lines and discs for the European market be mastered with 625 lines. Actors who worry about being photgraphed only from their 'best side' do not like the idea of appearing too tall and thin, or too short and fat, when watched on the wrong standard TV.

For games material, however, the slight distortion caused by compromise coding is unlikely ever to matter.

Where incompatiblity really matters is when dealing with the myriad of audio/visual connections on TV sets. A modulator can connect the player to the aerial (RF) socket of the TV set; RCA jacks can handle a composite signal; a 21 pin SCART socket handles either S-VHS, composite or RGB feeds.

The aerial connection is a composite signal which is coded according to the country of sale for either the NTSC or PAL system, and modulated on either a VHF or UHF radio frequency carrier.

The composite connection is the same signal, but without modulation, whereas the S-VHS or S-connection is a mixed feed of luminance and chrominance signal, but without the PAL or NTSC system used to combine them.

The RGB feed provides four signals – one for the red content of the picture, one for green, one for blue, and one a composite sync signal which combines horizontal and vertical pulse information so that it behaves like a TV picture with no picture content.

Although some early TV sets with SCART sockets did not have the RGB pins connected, most now do. Most modern sets have sufficient flexibility in their synchronization circuit to lock onto either 50Hz or 60Hz input signals.

In general, the best way to connect any video equipment to a TV set is by RGB SCART, because the signals are in their purest, uncoded, form. The differences between PAL and NTSC colour coding are thus completely bypassed.

This is the most common way to connect an imported NTSC console to a UK PAL TV or monitor. And the full-screen 60Hz display that results is vastly superior to the 50Hz letter-boxed display common to UK PAL systems – something that's fuelled imports of American SNES systems, in particular.

Graphics are bigger and clearer and, above all, games run at the speed they were actually designed to, making them faster and tougher in the process.

There are ways round the PAL problem, of course. Games can be modified to run faster on PAL systems and graphics can be made to fill the PAL screen, too. However, for one reason or another, Japanese console manufacturers have never allowed it to happen.





**An imported US SNES (top) is a popular choice for owners of 60Hz-compatible TVs. However, the UK Jaguar (above) offers a solution**

Atari have recently tackled this issue by discouraging letter-boxing in titles for their new Jaguar system. The firm claims that their non-territorial games detect whether they are being played on an NTSC or a PAL system and play at the optimised speed and screen size.

The 50Hz PAL display still hinders things, though. In order to compensate for the 17% speed drop (60Hz to 50Hz), it's true that programmers can often turn up the game speed in their code.

Unfortunately, though, non-letter-boxing means an increased number of lines to display (625 as opposed to 525), so there's invariably a greater drain on the processor, making a full speed conversion hard to achieve (e.g. ATD's *Cybermorph* runs about 3-4% slower on a PAL Jaguar than on an NTSC model).

Until Japanese hardware manufacturers get around to supporting 60Hz-compatible TVs in the UK, it's unlikely UK console owners will ever get as good a deal as their US and Japanese cousins.

With CD ROM there is more

scope to make things compatible. A CD-i player, for example, puts out a 525 line or 625 line picture, depending on where it is bought. So a North American CD-i player puts out a 525 line picture, and a European player puts out 625 lines. This is wholly independent of the disc being played. So a European player will still put out a 625 line signal even when playing a movie disc coded to 525 line standard. There is thus no risk of a letterboxing effect as long as a local standard CD-i player is used with a local standard TV set.

This, though, is the root cause of the tall/thin, short/fat distortion issue. The player is having to stretch too few lines or squash too many lines when playing a "wrong" disc.

The field rate, 50Hz or 60Hz, is also determined by the player. And as evidenced by the quasi-PAL Laser Disc and VCR now quite widely used, most modern TV sets will lock onto either 50 or 60Hz signals. It should not matter whether the inout is by RF or SCART connecton.

The CD-i disc always spins at a standard speed, regardless of whether it contains 525 line or 625 line signals. As with audio CDs, the rotational speed continually varies, to keep the linear tracking speed of the laser on the disc constant, and keep the data read-out at a standard 75 sectors per second. This locks the audio signal to the standard CD audio sampling rate of 44.1KHz. For CD-i this clock rate is known as the Gold standard. The video signal must thus be adjusted to fit this rock solid standard, with the result that all CD-i discs will have the same playing time and audio pitch regardless of where they are bought or played.

The adjustment takes advantage of the fact that the MPEG coding works only with fields, and thus in all playback situations fields must be used twice over to create the illusion of an interlaced picture.

In the correct situation, with a 625 line disc played on a 625 line system, each field is used twice. But where discs are played in the wrong countries, some fields in the picture sequence are used only once instead of twice, or used more than twice. The technique is similar to that used for broacasting films shot at 24 or 25 frames per second at NTSC rates of 30/60 Hz. In effect a CD-i player is a very low cost TV standards converter. The only disadvantage is a very slight picture judder, which most people will not notice.

And even this marginal effect is only noticeable on video material, where every field is slightly different from the last. When the source material is film, shot at 24 or 25fps, the pairs of TV fields are all the same, so there is no quality loss.

With CD-i, the disc controls the gameplay clock speed, so that even when discs are played on the wrong standards system, games play at the correct speed.

This is no mean feat, because the CD-i system has at least five clocks, in the software, hardware, operating system, audio sector and TV synchronization circuits. It all comes back to the Gold standard, locking gameplay to the sector clock, which is locked solid to the sound sampling frequency for CD, 44.1KHz.

The system may appear to break down, for instance if a counter appears on screen, to display numbers on screen. These numbers will then not display at the intended speed because the video display is continually being altered to match the rock solid sound clock.

'With that number of clocks,' admits a system designer, 'there will always be plenty of opportunities to get things wrong'.

Apart from minor points like this, all the complexity resolves down into a very cleverly designed, simple proposition.

But life is never that easy. The CD-i standard also very cleverly provides for a blocking flag in the disc data stream. This flag identifies a disc as being of 60Hz-only standard, and can instruct a 50Hz player not to play it. Similar flagging can be used to stop 60Hz players playing 50Hz discs. So software developers have the option to block the use of CD-i discs sold in the USA on European players.

So far this option has not been exploited. But you can be sure that someone, somewhere, sometime, is going to find a good reason – doubtless not unconnected with hard cash – to put the mockers on cross-Atlantic software trading.

One very good reason for the software companies to block disc trading is to help create a new market for global gaming by cable superhighway. The highway head end will install a games system which can serve many subscribers at the same time, giving people in different homes in different cities and countries the chance to play against each other in some form of global tournament.

Philips' Research Laboratories in Redhill is developing superhighway technology, and to test the game playing idea installed a Silicon Graphics system with virtual reality software. One lucky researcher gets to sit with a mouse, driving a car around a virtual town and countryside. The virtual images can easily be feed into the network, giving remote viewers the chance to drive and race. And here Philips has found what could be the fatal flaw in the concept of network gaming.

When the workstation is connected to a highway network, the video signal has to pass through so much electronic circuitry that it is delayed by at least one quarter of a second.

This may not sound much, but to a games player it is an eternity. The vehicle responds late to steering commands, and this makes the player over-steer, just as a car-driver does when first piloting a boat.

Short of re-writing the fundamental laws of physics to make the signals travel faster, there is little that anyone can do. Until technology catches up, that is.






**CD-i's first Video CDs could not be played on any other FMV system. Commodore made the sure the CD[32]'s FMV cart could play them, though**

# A terrible wind that robs people of speech, reason and memory.

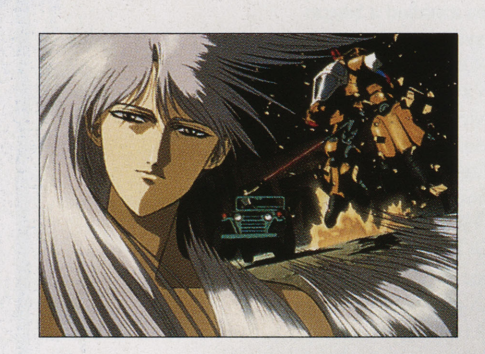
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**The Manga effect can also be seen in**

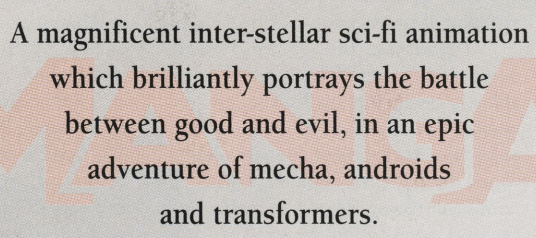
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# Testscreen





After scanning the entire galaxy of videogames we bring you this month's brightest stars.

First up, we have *SOS* on the SNES. Previously entitled *Septentrion* in Japan this unusual but undeniably original platform game uses Mode 7 to great effect. And there's also *Heavenly Symphony* – which finally screeches onto the Mega CD this month, but almost crashes in the process. A potentially great game, ruined by poor 3D programming.

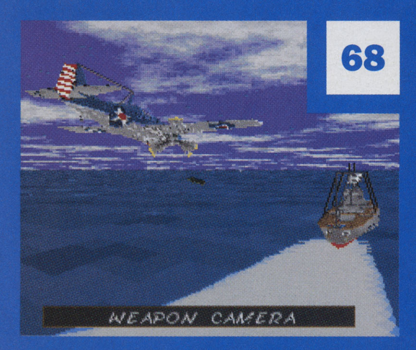
3DO *Super Wing Commander*, on the other hand, shows what a little time and effort can produce – a great space blast. And taking you from the sublime to the ridiculous in a single bound, we bring you Origin's great *Pacific Strike* and the ghostly mayhem of CD-i's *The 7th Guest*.

Finally, this month's Retroview pays homage to a great game from the past, *Flying Shark*. E

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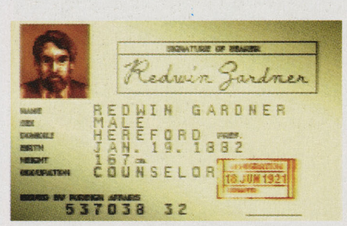


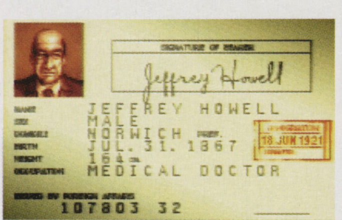
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# SOS

| | |
|---|---|
| **Format:** | SNES |
| **Publisher:** | Vic Tokai |
| **Developer:** | Human |
| **Price:** | £60 (Import) |
| **Size:** | 8 Mbit |
| **Release:** | Out now (US) |
| **Supplied by:** | Zap<br>0532 590077 |





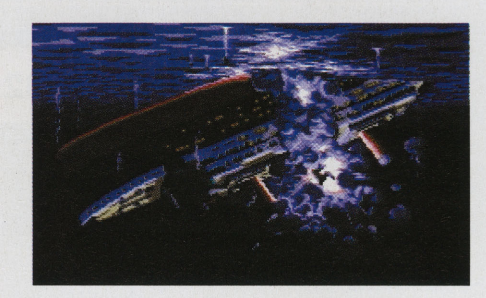


**The four characters have different personalities and different ways of persuading survivors. Apparently**

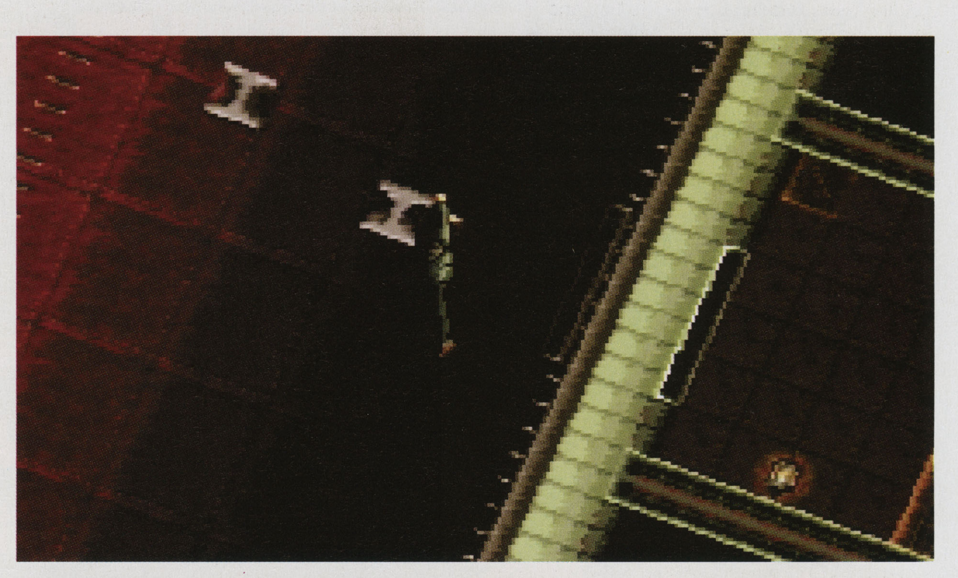
A few years back, SNES owners were continually swamped with quality software. The gap between the system and Sega's 16bit just seemed to get wider and wider. But things have changed quite dramatically. 16bit Nintendo owners now have to look very long and hard for quality – and perhaps more importantly – original software.

Predictably, the best release this month is, in fact, a re-release, which came out in Japan last year under the name of *Septentrion*; but because of an abundance of Japanese text, many importers (and potential punters) steered well clear. Which was a shame because *Septentrion*, even with the Japanese text, was an engaging and highly original piece of software.

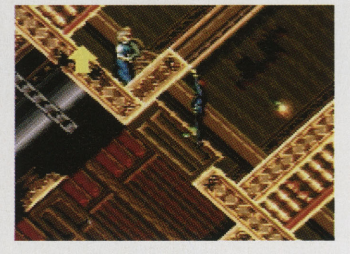
Now, thanks to US publishers Vic Tokai, an English translation is available. Well, a Japlish translation would be a more accurate description. Yes, once again we're subjected to a game with an appalling manual – in fact, it's about as much use as the original Japanese manual was. It goes without saying, that many of the game's intricacies have to be



**The Lady Crithania keels over and starts to explode. Things aren't going too well**

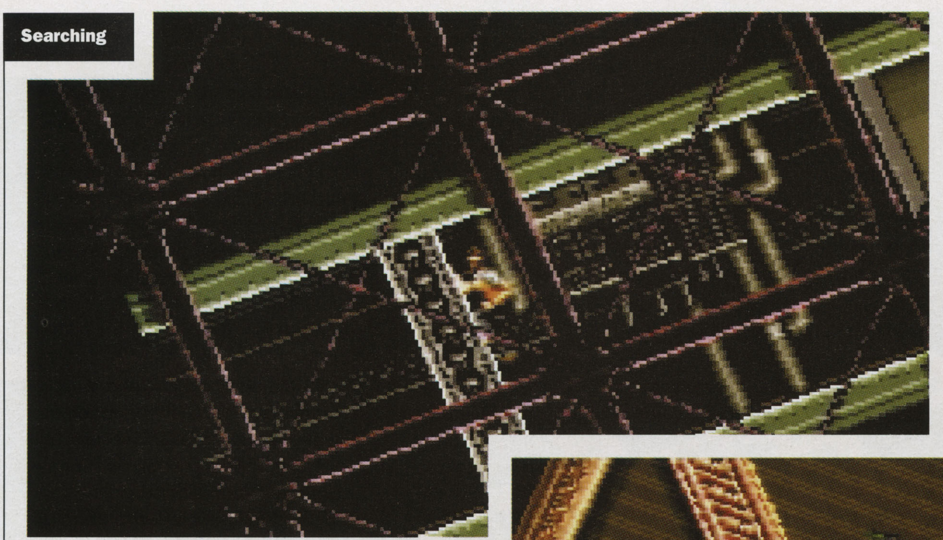




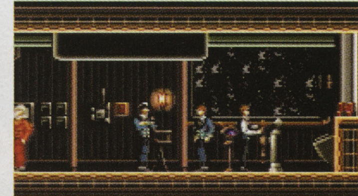


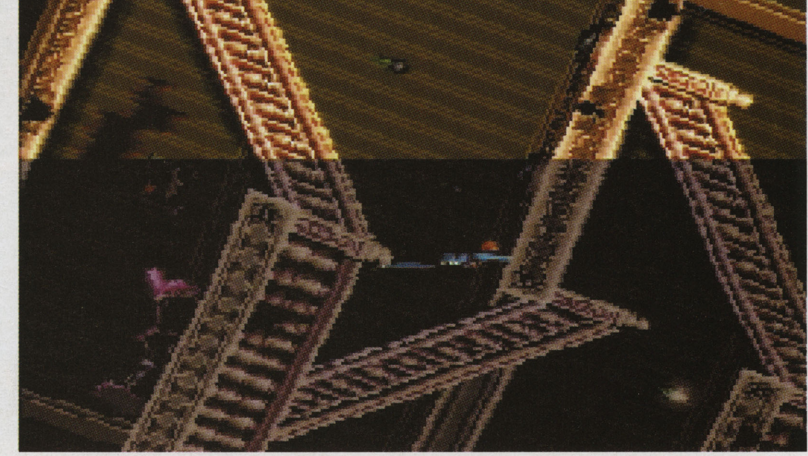
**The 360 degree platformer: *SOS* involves hanging onto ledges for long amounts of time**

Searching



It's not only the living quarters that you'll need to search. In one section of the hull you'll find a lift with people trapped inside. But can you get them out?

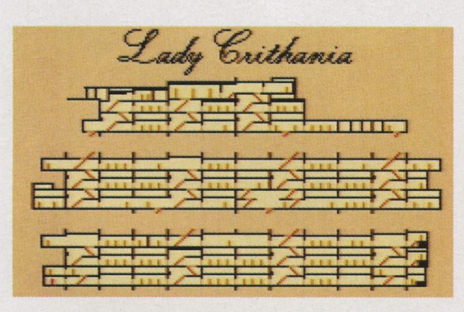




When your time begins to run out, the ship slowly fills up with water. It's possible to swim under water for a while – and you'll need to if you're going to find the escape hatch

fathomed out by trial and error.

The game basically follows a storyline where a tidal wave engulfs a huge ocean liner. You take control of one of four selectable characters and have the arduous task of guiding them through the ship to find and rescue as many of the other passengers as possible. And as if that wasn't tough by itself, there's only one hour to escape before the ship sinks. In true disaster movie style, *Septentrion* even moulds some of the game's storyline around the lives of different passengers and crew members. Poseidon Adventure fans (should they so exist) will be in their element.





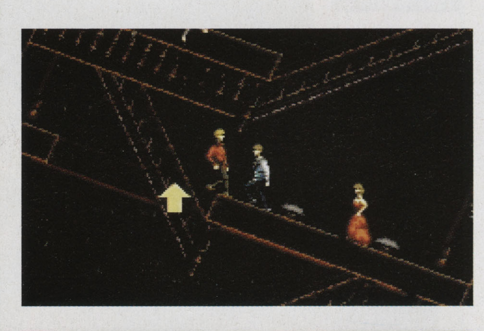

The map (top) is also handled by the SNES' Mode 7 and can be zoomed in and rotated. Each character starts with their own story (bottom)

The real innovation here, and not just graphically, is the environment – the SNES' Mode 7 is used to rotate the screen to simulate the ship as it turns over in the water. And as you'd expect, this causes real problems as you negotiate the damaged interior and try and get to the ship's only usable escape hatch. Rather than continually rotating, the ship moves gradually in shifts which enables you to gain access to certain sections of the ship. Only by taking the correct route can the path to the bottom of the ship (it lies overturned in the water) be made.

For the most part, *SOS* is a highly enjoyable game. It oozes atmosphere with its borrowed Titanic imagery, and the music heightens the tension considerably. It's greatest strength is its marrying of different game styles – it borrows elements from *Prince Of Persia*, and even *Lemmings*, and manages to create a wholely unusual blend of action, with human tragedy the underlying theme. Conversation plays an important role in human interaction – whenever you meet any survivors it's important to persuade them to follow you – the more people you can save the more successful you will be.

Continued next page





## The rescue

When you meet up with survivors the important thing to remember is that your escape route needs to be as safe as possible – at the slightest opportunity your merry band will throw themselves down the nearest gaping chasm.

Also, make sure that you don't stray too far from them – as soon as they're out of sight there's a far greater risk of something nasty happening to them.

Continued

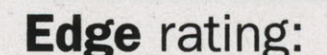


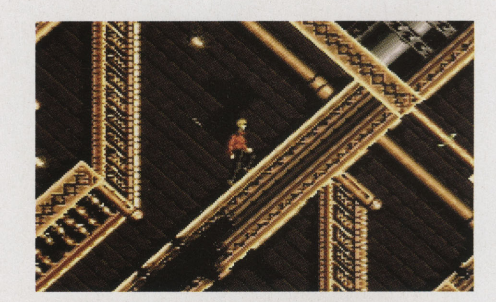

**Saving people is often a case of trial and error. A conversation button lets you address the pleas of survivors (above) while getting them to follow you (top left and right) is handled by a 'follow' button**

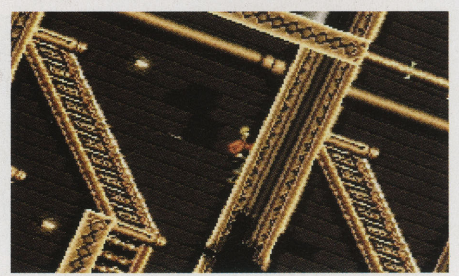
However, there are a few problems. Control occasionally feels a little awkward. Getting your character to reach certain points isn't easy and there will be times when you'll die through little fault of your own – a black star in any games designer's book. Also, the sporadic tendency for following survivors to plunge to their death can prove a little frustrating. Especially when you've just guided them through the best part of the game. Other worries could be levelled at the lack of variety in gameplay – the action might prove a bit too samey for some.

Still, there's an awful lot to recommend here. As a platform game it's refreshingly different, sharing features with many adventures. And if it had some of the jaw-dropping pyrotechnics that we all know the SNES is capable of, this could have been an exceptionally good looking game, too. Despite its flaws, *SOS* tackles the interactive movie concept better than most of the FMV-based attempts, and that surely says something in itself.

**Edge** rating: **Seven** out of **ten**







**And here's the problem: every few minutes the ship rotates around you. Gentle slopes (top) quickly turn into dangerous pistes (bottom)**

# Win a CD$^{32}$




One spanking new CD$^{32}$ – complete with FMV cart – up for grabs...

And here it is all its glory – the wonderful, stylish FMV add-on. £150 quid of pure MPEG loveliness

The irrepressibly generous Commodore have decided to donate another brand spanking new CD$^{32}$ to **Edge**. And not only that, but a £150 FMV cart, too. As luck would have it, **Edge**'s hardware room is already packed with 32bit kit, so what better circumstances for a competition, where we relinquish this esteemed freebee into the hands of one lucky reader. Here's the deal:

Answer the following questions about 32bit hardware and write your answers on the back of postcard or sealed envelope. Send your entries to: **CD$^{32}$ Competition, Edge, 30 Monmouth St Bath, BA1 2BW**. Entries must arrive no later than Thursday 30th June.

**1) What chipset do both the A1200 and CD$^{32}$ share?**
a) AGA
b) CGA
c) EGA

**2) What's the name given to CD$^{32}$'s 'chunky to planar' chip?**
a) Interlacer
b) Akiko
c) Terry

**3) Which 32bit machine has the 3DGE?**
a) CD$^{32}$
b) Sony PS-X
c) TXE Multi System

**4) Which 32bit machine uses Hitachi CPUs?**
a) Saturn
b) Jupiter
c) Uranus

Smallprint: Commodore and Future Publishing employees found guilty of entering will be publicly humiliated before an audience of disgruntled **Edge** readers. No cheating, no multiple entries, and most definitely no comebacks – **Edge**'s decision is final.

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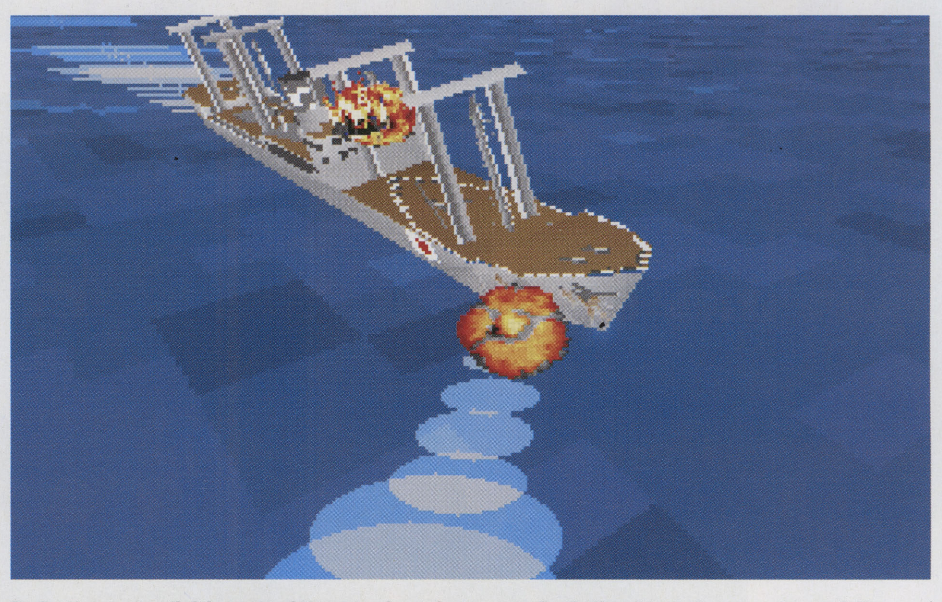
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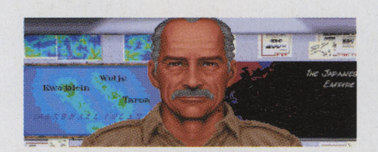
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# Pacific Strike

| | |
|---|---|
| **Format:** | PC |
| **Publisher:** | EA |
| **Developer:** | Origin |
| **Price:** | £50 |
| **Size:** | 9 disks |
| **Release:** | Out now |



**By far the most satisfying part of the game is seeing your perfectly-timed torpedo connect gracefully with the hull of a destroyer (all without flying into the destroyer yourself, of course)**





**Sean Connery (top), alias Commander Biggs, gives you and Jester (bottom) your briefing for another stupidly dangerous mission**

With an uncharacteristic lack of hype, the latest Origin epic to gobble up acres of disk space, memory and processor power wobbles bloatedly on to the scene. *Pacific Strike* is the sequel to *Strike Commander*, set during the Second World War when pilots drank 'java' and spoke of 'Tojo'.

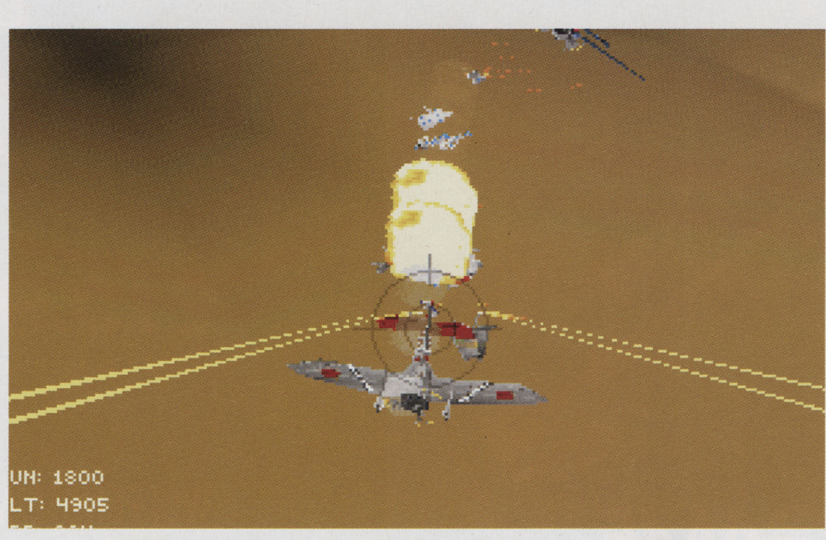
Here, we join the action just as the Americans finally realise there's a war on when the Japs bomb Pearl Harbour. Our trusty apple pie heroes leap into a couple of Wildcats sat on the runway and give the Japs what for, armed only with machine guns and a sickening line in gung-ho.

Thus begins a typical Origin flight sim, a series of missions taking out fighters, bombing aircraft carriers and crippling the Nipponese menace. If you've played *Strike Commander* you know the drill. Between each mission there's a chance to talk with your poorly-animated pals in the mess hall, and it's here the plot, such as it is, gradually unfolds.

Biggs, your CO, briefs you on the next mission, while talking to Squints (the ace but burned-out pilot with an eyesight problem) and Jester (your loathsomely wholesome wingman) sometimes earns you battle tips.

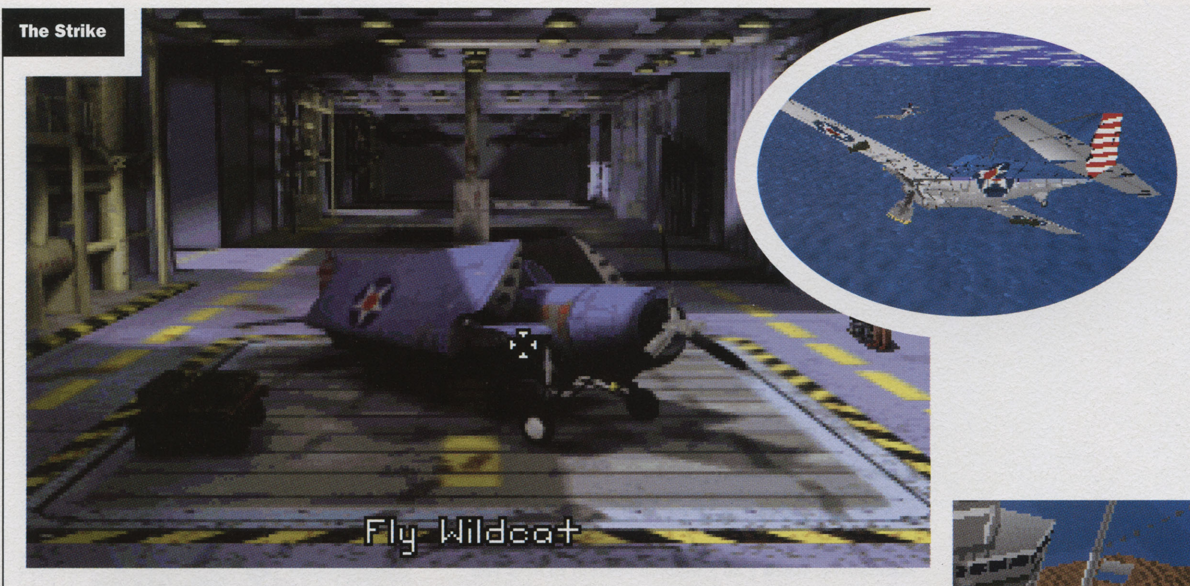
In the air it's all you can do to stop goggling at the gorgeously detailed texture-mapping of the planes and carriers and concentrate on finding the enemy without a radar. You're over the sea most of the time too, which doesn't help visually.

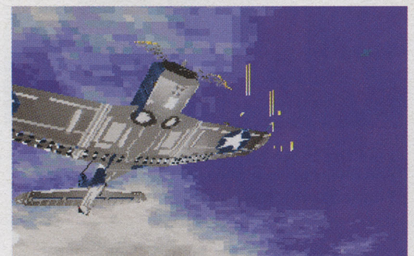
What Origin has realised at last is that




**On a fast enough machine the dogfights are exhilarating, especially when you remove the almost redundant cockpit. Origin has gone overboard on the plane crash sequences**

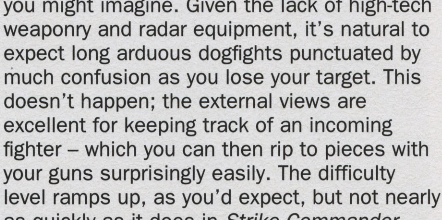
**The Strike**






**Once you've armed the plane (top left), taking off from the carrier (bottom) is a simple procedure**



***Strike's* external views are not only essential to the gameplay but give a bloody marvellous view of the carnage happening around you**

modern flight sims are really ridiculously simple to play. You target the enemy a mile away when he's still a dot in the sky, loose off a missile and go on to the next victim while the weapon does it work automatically.

*Pacific Strike*, because of its time setting, does away with all that – it forces you to get into extremely close combat. You have but a primitive plane, a few machine guns and occasionally some bombs to do the job with, and it turns out to be a great deal more fun. Strafing an aircraft carrier from 200 feet and pulling up just as it goes under in a glorious bitmapped explosion gets the adrenaline flowing quicker than any missile plucking a MiG-29 from the sky can.

But the game isn't nearly as frustrating as you might imagine. Given the lack of high-tech weaponry and radar equipment, it's natural to expect long arduous dogfights punctuated by much confusion as you lose your target. This doesn't happen; the external views are excellent for keeping track of an incoming fighter – which you can then rip to pieces with your guns surprisingly easily. The difficulty level ramps up, as you'd expect, but not nearly as quickly as it does in *Strike Commander*.

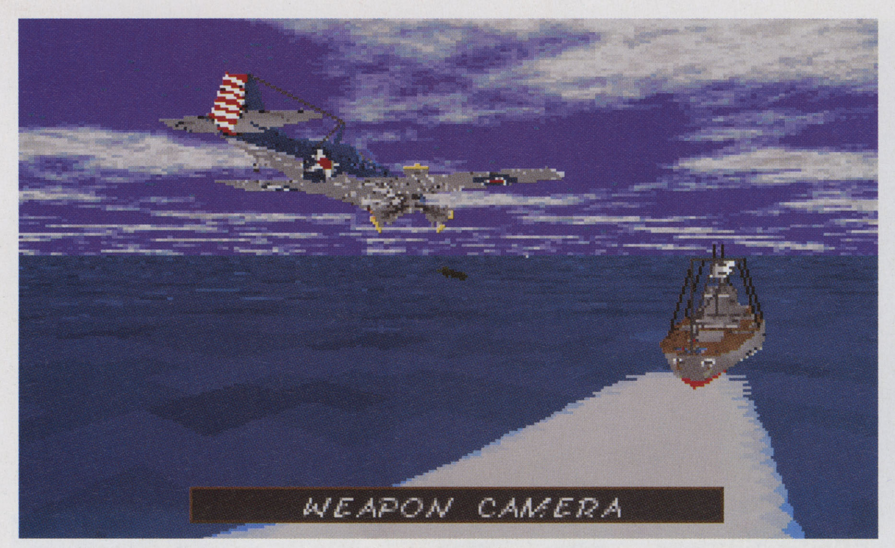
*Pacific Strike* won't be as widely-trumpeted as its predecessor, although in some ways it's a better game. It's more involving and therefore more rewarding because you're forced into the thick of the action, but at the same time the lack of hardware to worry about means it's easier to play. It's an arcade game, really; the mission builders and 'instant action' scenarios give you the ability to plug and play without the fuss.

Unfortunately two things count against it. The first is speed – it's slower than *Strike*

## Speak to me

*Pacific Strike* also has the obligatory Speech pack available for it. This little bundle of fun costs £20, takes up another 7Mb of disk space and only provides speech for a few characters in the game. Still, if you've money to burn, it's a worthwhile addition for the fighting sections, providing atmosphere to an already lusciously-presented game. Anyone want to speculate on a Mission Disc and a CD-ROM version following in a couple of months?

Continued next page

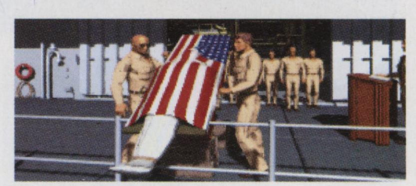



Dive-bombing enemy craft (above) is a tricky manoeuvre. There's no guidance system to help you here, it's down to your judgement. Unfortunately...

The Kill







...as the bomb hits the ship (top), so do you, down you go in a blaze of glory (middle). Scratch one would-be hero (bottom)



## Bombing

The tactics used to attack ground targets and ships vary from dive bombing to glide-bombing and torpedo bombing. Dive bombing and strafing are best used on ground targets, while you're advised to save your torpedoes for enemy shipping.

In case you're wondering, glide-bombing is just the same as dive bombing but you come in at a less severe angle – you approach the thing you're going to destroy from about a 20 degree angle (or as close to it as you can get), then release your bomb slightly ahead of the target at about 2,000 feet. Then comes the tricky bit – pull up fast or you'll follow the bomb straight into the target.

In all cases bombing and firing your machine guns is controlled with the spacebar or Return key. You'll find you get greater accuracy if you use a joystick during the trickier bomb runs, though.

Continued

*Commander*, if that's possible. If you want to witness the full splendour of its texture-mapped graphics (and if you don't you may just as well play *Tempest 2000*), do not attempt to run *Strike* on anything less than a 50MHz DX2 with Local Bus graphics, because it's an agonisingly doddlesome experience which puts you off the game for ever.

Secondly, there's originality – this is the last time Origin can get away with rewriting *Strike Commander*. There's nothing worse than a string of almost identical games that use a once-impressive graphics engine to prop up a paucity of gameplay – witness the *Ultimate Play The Game* series on the Spectrum all those years ago. The possibility of there being a *Strike Lieutenant*, *Arctic Strike*, *Bosnian Strike* and yes, maybe even *Desert Strike* just doesn't bear thinking about.

But for now, *Pacific Strike* will do very nicely indeed.

**Edge** rating: **Eight** out of **ten**



Skimming aircraft carriers is a fine way to study the texture detail in the game. At the highest detail level with everything turned on (the sky is a real performance sapper), be prepared for much jerkiness

# Super Wing Commander

**Format:** 3DO
**Publisher:** Electronic Arts
**Developer:** Origin
**Price:** £50
**Size:** 1 CD
**Release:** Out now (US)
**Supplied by:** Raven Games 081-663 6810




**Your craft comes equipped with all the necessary add-ons, like heat-seeking missiles, for example. Let loose a couple of these and a Dralthi fighter won't know what's hit him**

Anyone who's loaded a 3DO game game before will know the procedure: 1. Insert disc. 2. Marvel at beautiful rendered images. 3. Gasp at wonderful sound. 4. Notice complete lack of gameplay and switch off in disgust. *Super Wing Commander* is exactly the same – except for the last step.

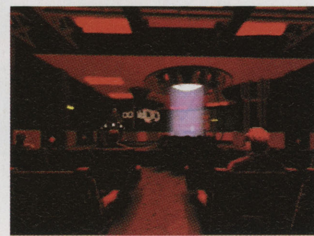
*Wing Commander* has enjoyed considerable success on a variety of formats, but this 3DO version is without doubt the best of the lot. Developers Origin could have chosen the easy option and simply ported the already excellent PC version, but that's not their style. Instead, they've isolated the rougher aspects – including the scaling of the ingame fighters and the substandard Star Cruisers – and smoothed them out, while leaving the rest of the game intact.

One part of the game that hasn't changed is the storyline. As in every other version of *Wing Commander*, you play the part of a rookie wingman, enlisted to help in the Confederation's battle against the evil Dralthi. To begin with, you're given simple missions – fly to a certain location, take out a few enemy fighters, and then fly back to the safety of your

**Intro**



**After a brief flight, you reach the safety of the Tiger Claw**



**Then you're ushered to the conference room for a briefing**



**The commander describes the current situation. It's bad...**



**... So bad that he has to call upon the rookies to fly sorties**

**Under fire**



**One of your first objectives is to escort this space station (above). Unfortunately, within seconds of setting off, you're attacked (above right)**



**The best option is to stay close to the space station to protect it from attack, while your wingman peels off to engage the enemy**

mothership, the Tiger Claw. But once you've got a few kills to your name, things get a lot more interesting: sorties become more intricate, the atmosphere intensifies and the plot starts to unfold.

As in the PC version, each mission is self-contained, with its own plot and conclusion, but they're all an integral part of the main story. Every mission you tackle – whether you're victorious or not – affects the Confederation's chances of success, and with 72 potential missions, *Super Wing Commander*'s plot has more twists and turns than an Alton Towers rollercoaster.

To describe Super Wing Commander as satisfying to play would be a grotesque understatement. Pursuing the enemy at close range, letting 'em have it right up their exhaust port with your missiles and then watching them explode in a shower of twisted metal is disturbingly gratifying stuff. The controls, despite their complexity, have been successfully crammed onto the 3DO's five-button control pad; although the 22 different commands seem daunting at first, after you've chased a few fleets of Dralthi fighters they become second nature.

Then there's the atmosphere: *Super Wing Commander* is absolutely dripping with the stuff. This is largely thanks to some brilliantly rendered cut scenes (many of which don't appear on the PC version, incidentally), but the stirring music makes a significant contribution as well.

Origin's improvements to the ingame graphics also help: the alien craft now scale more smoothly, are more detailed and move around the screen faster than ever before – with no evidence of slowdown. The aesthetic improvements to the game are most apparent when you face a Star Cruiser for the first time: not only are they now absolutely enormous, but they're also incredibly detailed and impressively shaded. In fact, the more you play, the more you realise how much 'tweaking' of the original game has been undertaken by Origin.

For those of you unfortunate enough not to have played *Wing Commander* before, you should be prepared to put in a few late nights to get into the game properly. But be warned: once *Super Wing Commander* gets a grip of your senses, you'll have to prise it off with a crowbar. So far, most 3DO software has been completely unworthy of attention; happily, *Super Wing Commander* avoids falling into the same category. **E**

**Edge** rating: **Seven** out of **ten**

## Missions

There are a possible 72 different missions in *Super Wing Commander*. As well as including all the original missions from the previous games, Origin have bolted on both of the secret missions upgrades to form one long, continuous story. But it is possible to complete the game having undertaken only 40 or so missions.

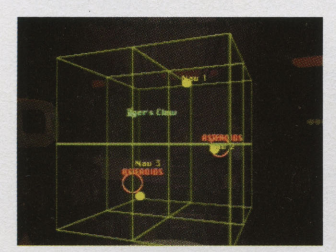
Your progress through the game depends on how successful you are. If you do well in a mission, you can leapfrog some of the other levels. If you perform badly, you're left battling for your life in the lower reaches of the game.

**Mothership**

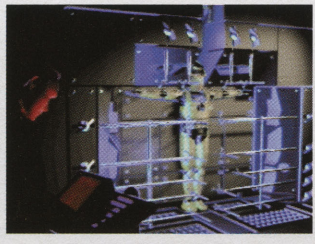




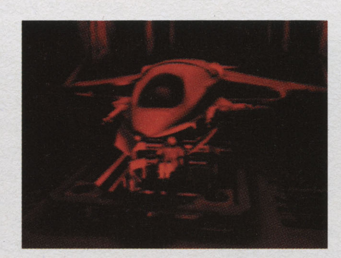
**Every so often you encounter an enemy mothership. These can really take some punishment**



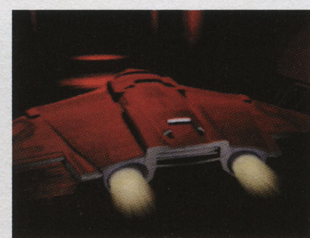
**A holographic map is used to illustrate the mission**



**You stand motionless as a robot prepares you for battle**



**It's time for man and machine to merge. Ready for take-off...**



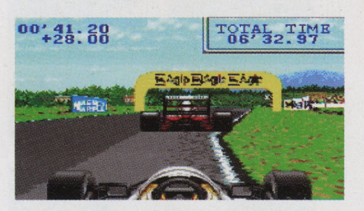
**The ship's thrusters ignite. This time you know it's for real...**

# F1 World Championship 1993
# Heavenly Symphony

| | |
|---|---|
| **Format:** | Mega CD |
| **Publisher:** | Sega |
| **Developer:** | Sega Japan |
| **Price:** | £65 (import) |
| **Size:** | 1 disc |
| **Release:** | Out now (Jap) |

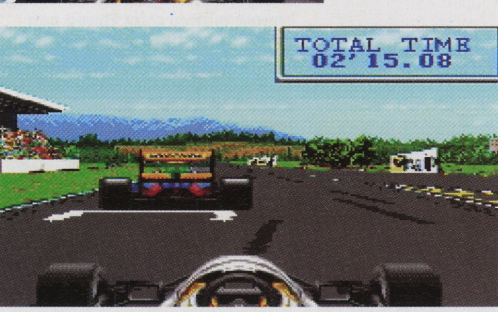



**Note those grey slabs to the left of the track – they'll stop you dead. Feel free to drive through as many cars as you like though, as Sega don't seem to have bothered checking their sprite-clipping routines**










**Problem 1 – every single track is horribly flat. Even the flattest racing track has curves that even the most badly written 8bit racing game can reproduce in some form. This is not an advanced game...**

For a while, the Mega CD really looked as if it might at last prove its worth. After a rocky start and a sad catalogue of releases (*Sewer Shark*, *Night Trap*, *Microcosm*, to name but a few), prospects for the system seemed to be looking up – and last month saw the preview of Sega's newest CD racer, *Heavenly Symphony*.

From the initial look of things many thought this would be a game to share some of *Virtua Racing*'s hard-won glory. So is it finally time to rush out and buy a Mega CD? Well, not quite...

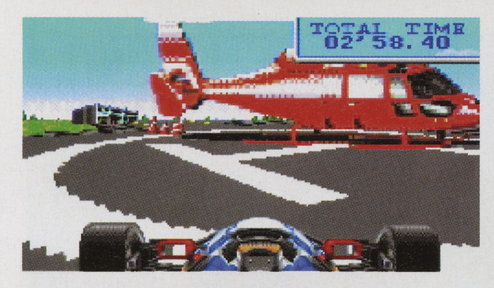
The initial idea of *Heavenly Symphony* was to accurately recreate the 1993 Formula 1 racing season in as many ways as possible – the racing takes place at several locations around the world, and each track has supposedly been 'flawlessly' recreated by Sega (but are there any cows next to real-life racing circuits?).

And, as with just about every other racing game, you also get the original drivers accompanying each of the tracks, complete with pixelized versions of their actual cars.

Part of the game's attempt at realism involves subjecting you to digitised film sequences in which various people's faces slide mysteriously around the screen. The faces offer you what's probably pretty sound advice about each race, the problem is that it's all in Japanese – in this initial version at least, so these verbal sections, which might add a brilliant extra tactical element to the whole affair, are something you have to do without.

The tactics behind the races themselves are nothing new – speed up on the long straights and slow down for the corners (you can see them coming using a handy head-up map), make the occasional pit-stop and try to




The designers of *Heavenly Symphony* really have gone to great pains to recreate the tracks perfectly, including car parks, cows, helicopters and even hotels on some stages. Each car has been reproduced in great detail (right) – when they crash they don't rejoin the race, either




Closeups

win the race. That's all simple enough, and with decent graphics this game would all be fine racing fare. But, with the Mega CD, such things can never be taken for granted.

When the graphics for *Heavenly Symphony* were planned, it was with distance in mind – pit stops involve driving up to a team of people that gradually look more and more like a collection of large multi-coloured squares.

Similarly, when the courses were designed, it was with people who always stay on the track in mind – you won't notice the crash barriers until you stop dead, start spinning, look down and then notice the differently coloured squares on the floor.

It's here that the game starts to lose its polish, despite the fact that it's one of the few games based around the Mega CD's 3D scaling mode. While *Thunderhawk*, *Soul Star* and *Sonic CD* have admirably demonstrated the machine's abilities in this area, here the scaling is crude and uncomprisingly jerky. And of course, those blocky closeups don't help things along much, either. The general rule in *Heavenly Symphony* is that if it looks like a 3D object you can probably drive through it (even other cars on some occasions) whereas, if it's a paving slab laid neatly into the turf it can stop your car quite easily.

All of this points out one fatal mistake on Sega's part – when they set out to create a replica of the 1993 season, they obviously spent a lot of time getting the drivers, conditions, tracks and scenery exactly right. Their mistake was to throw the fruits of all this painstaking research into such an unsophisticated 3D racing routine – in which the other cars don't so much travel as flick on and off, and remain seemingly stationary for large amounts of time on corners.

Okay, so the Mega CD may not be as capable of fast perspective 3D as other, more recent machines, but a little bit of mathematics and the same methods that ran so many racing titles on the 8bits could have produced a much better game.

The game's 'accurate' representation of last year's season seems perhaps a little flawed as well. Okay, so it's all meant to be totally correct, but if you're not a racing nut you'll be left with two questions; 'why is this factual stuff interfering with my game', and 'why didn't they cut the video, reduce the scenery, and leave it on a cartridge?'

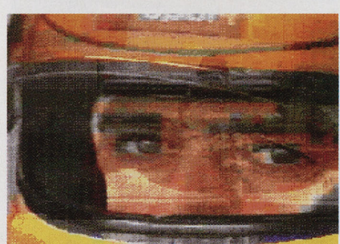
Something that's bound to stir fond memories in Mega Drive owners – remember *Super Monaco Grand Prix*?




Using the Mega CD's 3D scaling chip, you'd expect things to move along fairly smoothly. Some token cows do little to make ammends

**Edge rating: Four out of ten**





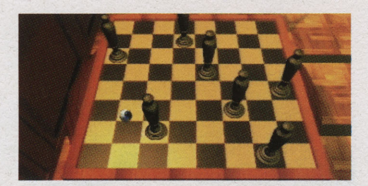
The many video sequences are accompanied by light guitar rock tracks and sampled sounds from Fuji TV's 1993 Grand Prix coverage

# The 7th Guest

| | |
|---|---|
| **Format:** | CD-i |
| **Publisher:** | Philips |
| **Developer:** | In-house |
| **Price:** | £50 |
| **Size:** | 1 CD |
| **Release:** | June |



**Spooky goings-on in the Stauf mansion (above) are a common sight. But what does it all mean?**









**A selection of puzzles. (From top) a deceptively tricky chess puzzle – get a piece on each line to win the game. Next, the graveyard cake. Simple: just get rid of two skulls, two tombstones and a joining piece of land with each move. And, lastly, a simple word puzzle**

Some may argue that the CD-i needs a game like *The 7th Guest* like it needs a kick in the CPU. But seeing as there's a distinct lack of quality titles for Philips' machine anyway, Trilobyte's infamous CD explore 'em up finds itself teetering on the border of acceptance.

That's not to say that *The 7th Guest* is a great game – no click-and-wait game could ever be classed as such – but it does go someway to make use of the CD-i's DV cartridge – and the results speak for themselves. Unlike the PC CD-ROM version, this runs in 24bit colour at a glorious 24 frames per second. And a more obvious bonus is that you won't need a doctorate in programming to get the thing up and running.

As far as gameplay goes, it's fairly simple: you move around Stauf mansion searching rooms, solving puzzles and trying to find the reason for your very existence. Getting around the mansion is achieved by simply shifting an animated cursor around the screen and then pressing the button. But here's where things get a little frustrating – as you'd expect with a CD-ROM game, you can't move where you want to – only to predetermined points. And when you reach these predetermined points, all you're left with doing is solving some rather obscure puzzle.

As there's very little in the way of gameplay, *The 7th Guest* comes across as a lavishly produced puzzle compendium with minor adventure overtones. However, in tune with most CD-i software it exercises the brain and not digital dexterity; which is just as well – the CD-i controller is absolutely useless at accurate, quick movements.

Overall, CD-i *7th Guest* is more of a demonstration of MPEG video compression, than anything else – the original PC version came on two CDs, remember. Newcomers to 3D games will surely be knocked out by this version's visual appeal, but sadly it's just a case of another CD title entering the domain of the 'gamevideo'.





**At intervals ghostly apparitions appear (above). Listen carefully to their conversations – sometimes they can offer valuable information**

**Edge** rating: **Five** out of **ten**




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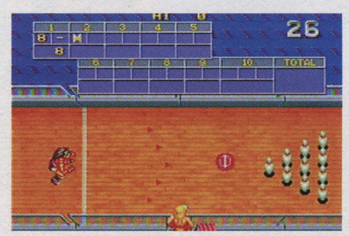
# Windjammers

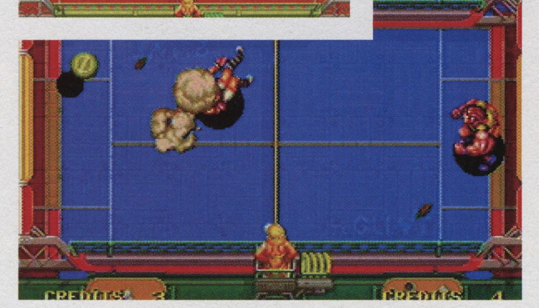
**Format:** Neo-Geo
**Publisher:** Data East
**Developer:** In-house
**Price:** £175
**Size:** 74 meg
**Release:** Out now
**Supplied by:** Raven Games
**Tel:** 081 663 6822




**The frisbee throwing and catching bonus game (insert) is good fun. The American player has let loose with a Super Throw (main). There's not a lot you can do to stop it – but that doesn't stop you trying...**




**From the top: power up your Super Throw when the frisbee's in the air. Knock the skittles down for bonus points. (Bottom) running around is fine, but there'll be times when you have to skid to catch the frisbee...**

Hold on a minute, this can't be right. *Windjammers* is a non-violent frisbee throwing game with cuddly dogs in it – this can't possibly be for the Neo-Geo. Anyway the box claims this is a 74 meg game; *Windjammers* doesn't look or sound like a 74 meg game, so it can't be for the Neo-Geo, can it?

But wait, what's this? There's a price tag; 'one hundred and seventy five pounds' – oh dear, this is a Neo-Geo game alright. Here we go again with another of those 'big memory, big money, big disappointment' Neo-Geo reviews that seem to have graced the pages of **Edge** in recent months.

As a concept, *Windjammers* isn't too bad. The idea is to score more points than your opponent by throwing a frisbee into their goal. Of course, things aren't quite as easy as they sound. First, the frisbee can be thrown at ludicrous speeds, can be bounced of the scenery to create angles, and even lobbed high into the air over your head.

Secondly, there are Super Throws. When your opponent lets loose with one of these curling, twisting super fast throws, there's very little you can do to stop it reaching the goal. There are also two rather smart bonus rounds: one throw and catch game (complete with cuddly dog) and a skittles game.

So, as a concept, *Windjammers* is fine. It's playable, fun – especially against another human opponent – and action packed. But as an overall package, it's let down by three major factors. Number one, it's far to easy to complete in one player mode. Two, the rounds don't last long enough. And number three, there's nothing particularly outstanding about it; *Windjammers* could be done just as well on a SNES or Mega Drive – and at this price, you'd expect more then that...

**Edge** rating: **Five** out of **ten**

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Peruse **Edge**'s software graveyard and pay respect to some of the world's most playable games. This month, a classic coin-op shoot 'em up...

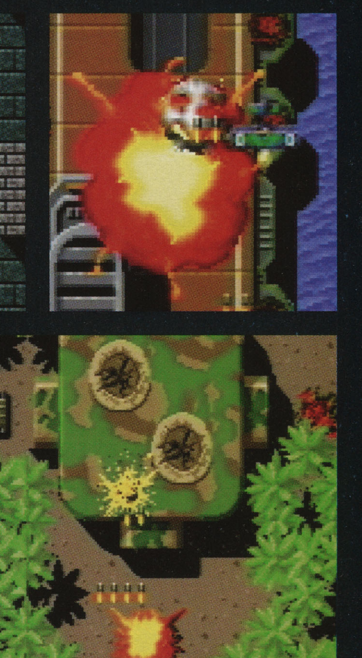
# Flying Shark

| | |
|---|---|
| **Format:** | PCB |
| **Manufacturer:** | Taito |
| **Developer:** | Toaplan |
| **Players:** | One or two |
| **Price:** | £30 - £40 |
| **Released:** | 1987 |

**Edge invites quality contributions to Retroview (approx 250 words) – printed entries will be awarded a year's subscription to Edge. Address them to Retroview, Edge, 30 Monmouth Street, Bath BA1 2BW, or e-mail us via future@cix.compulink.co.uk, with a subject line 'ATTN: Jason Brookes'**




**It's possible to get kitted out with a decent arsenal of firepower, but keeping it will test the best players**



**A lesson in design: shoot 'em ups *need* decent, well-animated explosions (above and top)**







**A lesson in gameplay: death should never come as a surprise. Fortunately, the speed and sheer number of enemy bullets make *Flying Shark* one very tough cookie**

Vertically scrolling shoot 'em ups raked in vast amounts of cash back in the eighties, and none more so than those designed by the Japanese masters, Toaplan. From the outside, Toaplan's games looked little different to the coin-ops from competing companies. However, usually lurking underneath was their hallmark – painfully challenging gameplay – something that diehard gamers lapped up, and something that fuelled arcade owners' profits.

*Flying Shark* can still be found haunting old seaside arcades, and unusually this was one game that never received proper conversion treatment. Despite Graftgold's excellent Spectrum version and Ving's pixel-perfect Marty version, home computer versions failed to deliver any of the original's playability. Even the well-supplied PC Engine only played host to the game's big brother – *Twin Cobra* (aka *Ultimate Tiger* – see **Edge** 8).

*Flying Shark* was one of the first vertical blasters to introduce over-the-top power ups. It's possible to widen your plane's range of fire to a ridiculous extent, but keeping that level of firepower is another matter. It's the well-structured gameplay that makes *Flying Shark* so addictive. Compared to random blasters like the Jaguar's *Crescent Galaxy*, *Flying Shark* is a veritable masterpiece – nothing's left unrewarded and nothing's given without a fight. Graphic detail plays an important factor: the explosions are immensely satisfying; enemy planes plunge into the ground behind a trail of smoke; tanks crawl out from enemy bunkers etc, etc. And the excellent music – something Toaplan always delivered in its games – serves as a decent backdrop.

Toaplan arguably perfected the vertical shoot 'em up with this early effort. A catalogue of minor enhancements made their way into later games like *Twin Cobra* but essentially the same well-honed game engine delivered the action. Super Gun owners wanting a slice of some fast ,exciting gameplay would be well-advised to check this out.




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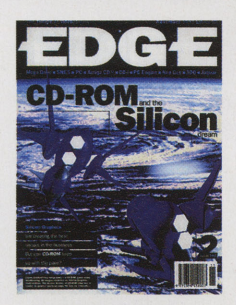
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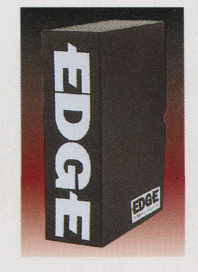





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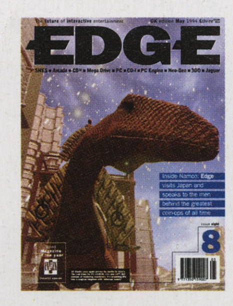
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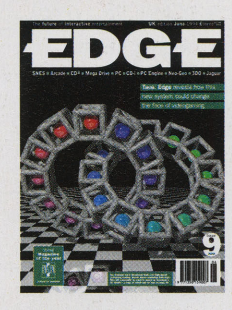



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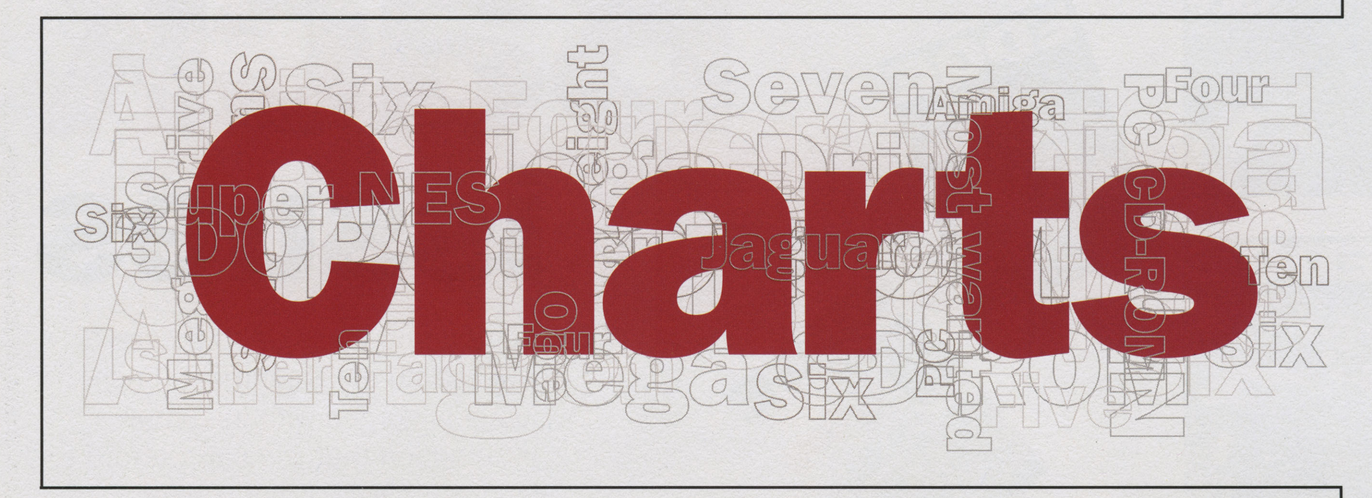
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# Charts

The very latest **charts** from across the entire world of videogaming

## Mega Drive

1 **FIFA International Soccer** ***Electronic Arts (£45)***
2 Sonic The Hedgehog 3 *Sega (£60)*
3 PGA European Tour *Electronic Arts (£40)*
4 NBA Jam *Arena Entertainment (£50)*
5 Aladdin *Sega (£50)*
6 Sensible Soccer *Renegade/Sony (£40)*
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8 Micro Machines *Code Masters (£35)*
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10 Mortal Kombat *Arena Entertainment (£50)*

## SNES

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2 Sensible Soccer *Renegade/Sony (£45)*
3 Sim City *Nintendo (£40)*
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5 Mario All Stars *Nintendo (£50)*
6 Aladdin *Capcom (£50)*
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9 Zelda III: A Link To The Past *Nintendo (£40)*
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## PC

1 **Sim City 2000** ***Maxis/Mindscape (£40)***
2 F-14 Fleet Defender *Microprose (£45)*
3 Ultima VIII *Electronic Arts (£50)*
4 Premier Manager *Gremlin Graphics (£35)*
5 UFO: Enemy Unkown *Microprose (£45)*
6 Beneath A Steel Sky *Virgin (£35)*
7 Microsoft Flight Simulator V.5 *Microsoft (£40)*
8 Frontier: Elite 2 *Gametek (£40)*
9 Elder Scrolls *US Gold (£46)*
10 Monkey Island Kixx (£17)

## US: all formats

1 **NBA Jam** ***Acclaim (Genesis)***
2 NBA Showdown *Electronic Arts (Genesis)*
3 World Series Baseball *Sega (Genesis)*
4 Ken Griffy Jr. Baseball *Nintendo (SNES)*
5 NBA Jam *Acclaim (Game Gear)*
6 NBA Basketball *Sega (Genesis)*
7 Wario Land *Nintendo (Game Boy)*
8 NBA Jam *Acclaim (SNES)*
9 Star Trek: The Next Generation *Sega (Genesis)*
10 FIFA Soccer *EA (Genesis)*

## Amiga CD32

1 **Frontier: Elite 2** ***Gametek (£40)***
2 The Chaos Engine *Renegade/Mindscape (£30)*
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4 Sensible Soccer 92/93 *Renegade/Mindscape (£25)*
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## Mega CD

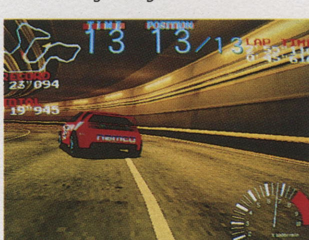
1 **Ground Zero Texas** ***Sony Imagesoft (£50)***
2 WWF: Rage In The Cage *Arena Entertainment (£50)*
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1 **Mega Race** ***Mindscape (£40)***
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## Arcade: dedicated

1 **Ridge Racer** ***Namco***
2 Suzuka 8 Hours II *Namco*
3 Out Runners *Sega*
4 Lethal Enforcers *Konami*
5 Title Fight *Sega*



***Ridge Racer*** **is still holding at number one, but *Daytona GP* could well topple it next month**

## Edge readers' most wanted

**Which item of videogames hardware or software – real or vaporous – would you most like to get your hands on? Write and tell Edge your greatest desires at: Edge Most Wanted, Edge, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW.**

**1 Alone In The Dark 3 *(PC)***



***Alone In The Dark 2* (above) was brilliant, but the third polygon adventure looks like being even better, edging aside *Daytona* and *Ridge Racer* to become this month's most eagerly awaited title**

2 Daytona *(Saturn)*



**Last month's numero uno, Sega's smart texture-mapped polygon racer, *Daytona GP*, drops a place**

3 Ridge Racer *(Sony PS-X)*



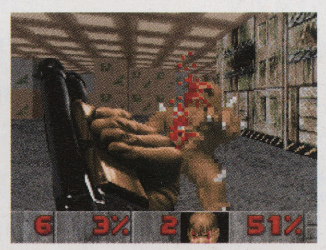
**The *Ridge Racer* craze shows no sign of abating. This is the first of two PS-X games this month**

4 Legend *(Sony PS-X)*



**Last month's shots have stirred up a lot of interest in *Legend* – yet another texture-mapped PS-X title**

5 Doom *(Jaguar)*

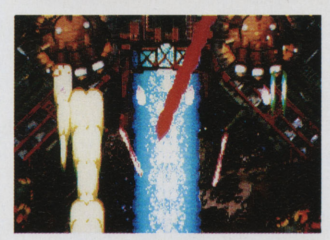


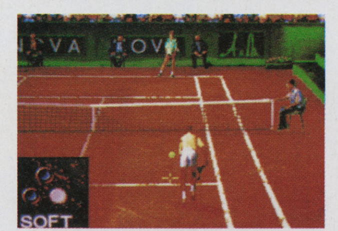
**The gore-ious *Doom* is set to appear on the Jaguar in the near future. Many of you can't wait**

## Arcade: PCBs

1 **Super Street Fighter II Turbo *Capcom***
2 Nebulus Ray *Namco*
3 Ultimate Tennis *Nova*
4 World Cup '94 *Tecmo*
5 Sorcer Striker *Raizing*
6 Super Street Fighter II *Capcom*
7 Grand Striker *Human Co.*
8 Metamorphic Force *Konami*
9 Nostradamus *Face Co. Ltd*
10 Raiden II *Seibu*



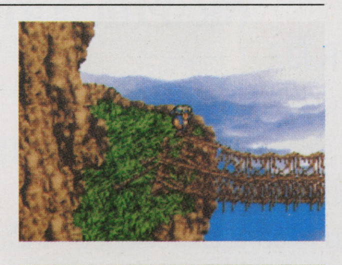





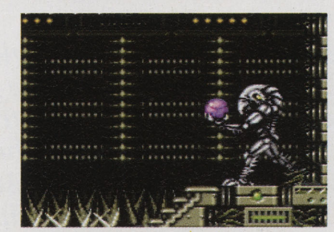

***SFII* (top) is still invincible, the excellent *Nebulus Ray* flies straight in at number two (middle), and *Ultimate Tennis* hangs on at number three**

## Japan: all formats

1 **Final Fantasy VI *Square Soft (SFC)***
2 Super Pyo Pyo *Banpresto (SFC)*
3 Derby Stallion 2 *Ascii (SFC)*
4 Sailor Moon R *Angel (SFC)*
5 Super Metroid *Nintendo (SFC)*
6 Muscle Bomber *Capcom (SNES)*
7 Fatal Fury 2 *Hudson Soft (PCE CD)*
8 Dragon Ball Z 3 *Bandi (SFC)*
9 Virtua Racing *Sega (Mega Drive)*
10 Fire Emblem *Nintendo (SFC)*





***Final Fantasy VI* (top) remains at number one, while *Super Pyo Pyo* (middle) re-enters at number two and Nintendo's excellent *Super Metroid* debuts at five**

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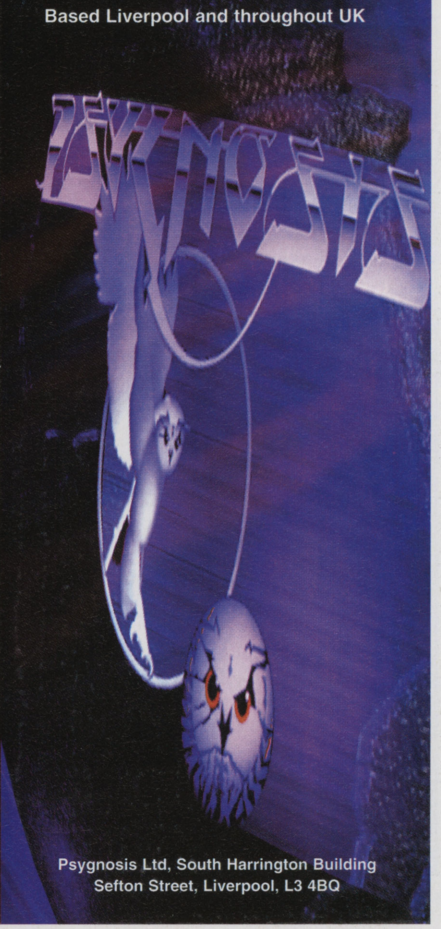
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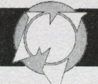
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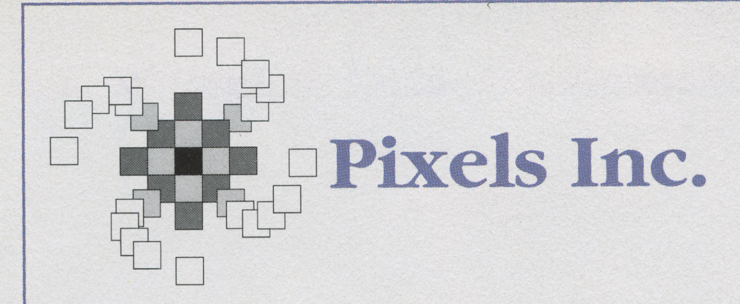
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# An audience with Jeff Minter

**Edge** shares a spliff with Jeff Minter – a man deeply in love with sheep, goats, llamas and Jaguars...

Few people who've had a computer over the last 10 years can have failed to notice **Jeff Minter**. His games are very original. As is his taste in beasts – which includes goats, sheep, camels and llamas. His appearance is shaggy – and he's the one man who, if told he is acting the goat, will take it as a compliment.

Jeff has carved a little niche for himself in games history, being the inventor of the camel shoot 'em up, the light synthesiser and numerous exotic game sub-systems, which have alternately delighted and baffled the public for the last 12 years.

After a period of success with his label Llamasoft, Jeff vanished for a while, and passed his time skiing in France and writing games for the doomed Konix game system. At Llamasoft's lowest ebb he wrote a groundbreaking shareware game called

*Llamatron*, based on Eugene Evans' classic Williams game, *Robotron*, which swept the board and became the most popular shareware game ever.

This dug Llamasoft out of a big hole, and enabled Jeff to take stock and firm up his already tight relationship with Atari – for whom he now develops games and sub-systems for the Atari Jaguar. In fact he's currently working on a light synthesiser for the Jag's CD-ROM unit, with his spin-off business, Virtual Light Company, whose usual task is to go to rave gigs and concerts to set up their industrial strength light synths.

Jeff lives in a remote valley in Wales, and divides his time between there and Sunnyvale, California (where Atari are based). He also has a little place in France from where he skis.

His conversation is peppered with sheep references, like his house, which has toys, posters, pictures and models of sheep, goats, llamas and camels – plus mementos from his trips to Peru.

Jeff has a 486 PC Tower, an Atari TT with Jaguar development system, and various other computers and systems. There's also about four or five arcade machines dotted about, with his two sheep, called Molly ('has her charms but she's not Flossie') and Flossie ('the prettiest sheep in the world') rambling around them.

**Edge** So, how did you get into coding originally?

**Jeff** Originally? When I was at sixth form college in about 1979 they had a Commodore PET. I just wandered into the room and there was some guy playing this very simple driving game. I asked the guy, 'Where did you get that game?' and he said 'I typed it in.'

So I went off to the library, borrowed a big book on BASIC, came in early the next day – and that was it, they got me. I loved it, fell hook line and sinker for it. I stuck with BASIC for about three months, and soon ran out of horsepower, so I learned 6502. On an 8K Commodore PET? But a bloody good grounding – if you can code on that you can code on anything!

**Edge** What was your first Llamasoft game?

**Jeff** *Andes Attack* on the Vic 20. We were amazed because we duplicated copies of this game and we went to a computer show. We sold them for a tenner a shot – and we sold out on the first day!

At that time all the UK coders were getting away with murder, they were writing really crap stuff that was all written in BASIC – and I'd been writing in code for a few years, and people were just amazed! That game did quite well in the States, and then I wrote *Gridrunner* which also did quite well in the States and earned me a nice little pile of money.

**Edge** You've got something of a reputation for new control systems. Did being totally original ever backfire on you?

**Jeff** I always tried to do new stuff, and in fact sometimes I got a bit slagged off for being too new. I remember doing *Mama Llama* and Julian Rignall gave me a right slagging for it because he didn't like the control method. You didn't have any bullets – you had that inertial droid. it took a while getting used to it, but it was quite a good game when you were used to it.

**'I always tried to do new stuff, and in fact, sometimes I got a bit slagged off for being too new...'**

He totally trashed it in ZZAP 64 – toasted it, in fact. That really spoiled my chances with the distributors, because they were taking quite a lot of notice of that magazine at the time. So it didn't really get out there as much as the other games. I was *molto* pissed off about that.

Game design is so over-simplified now. You look at a game like *Defender* or *Star Gate*, you've not only got a joystick controller you've got normal control of thrust and stuff like that, and with acceleration you have to learn to fly the ship. Whereas you look at a modern arcade shoot 'em up, you push the joystick up/down, left/right, and you're scrolling through a rigidly defined playfield where everything appears at the same time – everything's on rails. It's just a regression.

**Edge** Do you see this changing or will it get worse?

**Jeff** I like the idea that with these new systems – this 64bit stuff – where you can build 3D worlds, people aren't going to put up with stuff running on rails. I think it happened because Sega and Nintendo stuff is aimed at younger people, who don't want complexity in their games. But I think it makes a game a lot more interesting.

I remember *Virus* getting slagged off and that was just the best game ever. And yeah, sure it took about two or three days to learn how to fly the ship, and it took a couple of weeks before you could handle yourself in a dogfight, but when you could the feeling was just ace. To move into a cloud of mutants spiralling around you and just kick butt. That would make a lovely game on the Jaguar actually, Gouraud shading and texture maps...

**Edge** You mentioned David Braben's *Virus*, so who's coding do you admire?

**Jeff** Loads of guys. Braben of course, Tony Crowther, Andy Braybrook. Obviously Jez San is really good, he does some really wicked 3D stuff. There's some people in




Photographs: **Jude Edgington**

**'Game design is over-simplified now... Look at a modern arcade shoot 'em up, you just scroll through a rigidly defined playfield... everything's on rails. It's just a regression.'**

Continued next page

the States too, there's a guy called Rob Zdibble who worked for Atari for a long time. He's actually working on the 64bit version of *Star Raiders*! I cannot wait!

**Edge** All the old solitary coders are now in programming teams it seems. Will you always work alone or will you create a team one day?

**Jeff** That was an option when Llamasoft was doing really well – we could easily have turned into a software empire. We had the reputation, we had the money, we could easily have started getting people in to do coding. But I never wanted to do that – I wanted Llamasoft to be for my output. Now obviously I have to work with graphic artists and musicians.

That works if you've got a good rapport with the team, if you can actually put across your ideas, the stuff that you want. With Atari, they like the fact that they can give me something to do, and I run off with it and do it on my own... and probably do something different to what they thought of!

That happened with *Tempest*, for example. It is still possible for an individual to work in this industry, even if we do have to work with teams. On the next project after the light synth I'll be doing a CD-ROM product and coming up with the more psychedelic stuff. I like the idea of getting a reputation as a psychedelic programmer.

**Edge** You could have 'psychedelicist' on your business card...

**Jeff** Or perhaps 'Psychediliac'. Or should that be 'Psychedeli-yak'!

**Edge** So you do get 'project management' from Atari, but do you get the feeling they trust your instincts?

**Jeff** Yes. The guy who is my director, John Skruch, is a really excellent dude. He handles me really well, given he's got to take care of someone like me in a commercial environment. He knows how to ask me to do things without laying the pressure on too much. And he knows if they really need something I'll stay up late and pull the stops out.

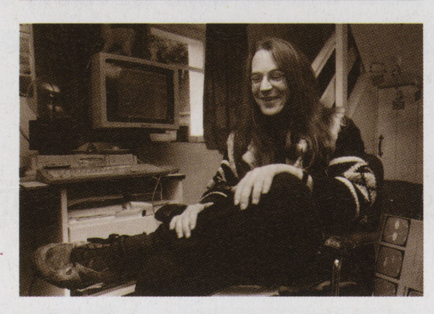
He's doing his job very well in that he's keeping me sweet, but I bet there's times he wishes he could handle me like a normal programmer. 'Do this and do it now.' But, you know, respect to him because he doesn't.

**Edge** Are you led by hardware?

**Jeff** I was certainly well turned on by the Jaguar, and as soon as I saw it it was immediate lust. I wanted to take it into my life. I like that rush you get from a new bit of technology coming out.







**'On the next project after the light synth I'll be doing a CD-ROM product and coming up with more psychedelic stuff.'**

The other reason I love the Jaguar is it's so easy to program. If you've programmed an ST or an Amiga you can go onto the Jaguar straight away. It's all laid out logically, you don't have to write in any arcane DSP language that looks like Martian – all Ls and Ks and Qs. It actually looks a lot like 68000 and it makes sense. It just happens to go damn fast as well!

**Edge** How about the light synth? Did you invent it or did you get the idea from somewhere else?

**Jeff** My earliest inspiration was being 11 years old, laying in a dark room, and listening to Pink Floyd's *Dark Side Of The Moon*. I just used to lie there and let my weird kiddy's imagination run off.

The second stage of the evolution was a party I was invited to when I was 14. Somewhere on the slope to drunken oblivion, I noticed these disco lights... you know those little traffic light things that sort of pulse vaguely in time to the music. I remember thinking to myself that there must be a better way of doing it than that.

And you know when you daydream in a boring class about being in a rock group – well I'd have those daydreams, but they'd always involve big screens, lights and lighting effects. I never had any idea of producing it, I just assumed one day somebody would make a machine like this and I'd be able to buy one, and I'd play it in the same way people play a guitar.

It was years later when I was programming the C64 that it all happened – I was out running and this algorithm just popped into my head. It was the basic flow/delay line algorithm that you see there on the Jaguar, the basic *Trip-A-Tron* effect, and I came back and coded it up. It was the only point that I thought I might have discovered something new, as opposed to re-engineering somebody else's stuff.

People are trying to do the same kind of stuff, but from what I've seen they're still so amazingly primitive, they still think colour cycling is a pretty neat idea. I can't however claim it's a completely original idea, because there have been people down the years who've tried colour organs, and things – for almost 100 years I think.

After I'd started coding the first light synth, I found a book by John Whitney, the guy who invented the slit scan effect at the end of 2001: A Space Odyssey. Well he wrote a manual for writing a light synthesiser. It was done when you couldn't do a lot of stuff in real-time – he had Pascal programs which would plot out these things in non-real time. He was saying there how different harmonies, different phases could correspond with notes on a musical scale, and how the results would be very pleasing.

So I don't think I can claim it all as original, but I had it in my mind before I saw anyone else doing any work like that. But It's been six, seven years since I released any new light synth stuff. To be able to put a version out in the home domain... it's going to surprise people.

Play an audio CD on the Jaguar and the screen's going to do that! I can crash my cleaning lady with this stuff. She comes in here and if I've got something good on there she'll just stop and stand there, slack jaw, standing still for about five minutes.

**Edge** So you've found a bug in your cleaning lady?

**Jeff** Well, not so much a bug as a slight susceptibility.

**Edge** Ahh... Well, thanks Jeff.

**'My earliest inspiration was being 11 years old, laying in a dark room, and listening to Pink Floyd's Dark Side of The Moon...'**

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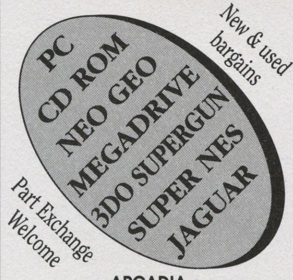
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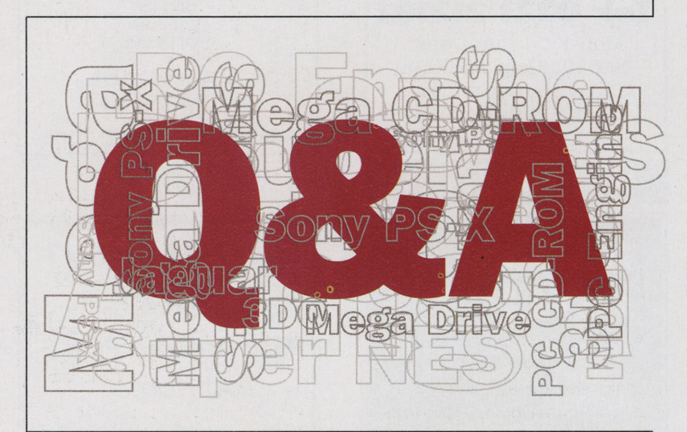
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# questiontime

Send your **questions** to Q&A, **Edge**, 30 Monmouth Street, Bath, Avon BA1 2BW




**Edge** provides simple answers to your questions about the complex world of videogames

**Q** I was very interested in your article in issue 8 on the Mars project from Sega, but I have some questions.
**1.** How powerful will Mars be? You talked of increased polygon handling. The Mega Drive can handle 4,500 polygons/second; how many can Mars candle?
**2.** Mars includes two Hitachi SH2 chips. Do these run at the same speed as the Saturn's?
**3.** Any details of which developers have signed up for the development kits?
**4.** With the Saturn on the way, do you think it's worth buying the upgrade, and do you think retailers will welcome a unit which will soon be overtaken by the Saturn?
**5.** You say Sega have promised versions of *Virtua Racing* and *Virtua Fighters* for Mars, but how close a conversion are they? Are we talking arcade perfect?
**6.** Mars includes improved sound chips. Are these the same sound chips found in the Saturn?
**7.** Will Mars improve the Mega Drive's screen resolution?
**8.** Will a UK Mega Drive with the Mars add-on still have large borders and run 17.5% slower?
**9.** Will any games be packaged with the Mars system?

**Michael O'Shaugnessy, Tamworth**

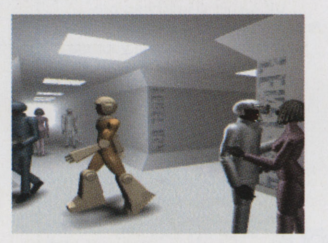
**A** **1.** Actually, the standard Mega Drive can handle nowhere near 4,500 polygons every second – it needs the SVP chip to manage that number. Mars, or Mega 32, is still under wraps, and there are therefore no specific details on polygon handling. Expect some powerful kit, but remember that this is a stop-gap system for Europe and the US – Japan is still pressing ahead with Saturn.
**2.** The latest rumour is that Saturn will include two Hitachi SH3 chips, which are more powerful than Mars' twin SH2s.
**3.** Many UK companies are receiving development kits for Mars – the Mega Drive's strength in the States and Europe means that Sega are pushing this format as heavily as Saturn. Although there is less commitment to it in Japan, as it will not be released over there, top developers Gau and Treasure are known to be working on projects.
**4.** It all depends on the power of Saturn and its technological superiority to the Mars hardware. It's very unlikely that Mars will be more powerful than Saturn; it might be more powerful than Saturn's original proposed specification, but, as reported previously, Saturn has been specced up to close the gap between it and Sony's PS-X.
**5.** The arcade games have a much higher screen resolution, giving more detailed and far more impressive graphics. But hopefully, Mars' speed will make up for its deficiencies.
**6.** No, Saturn has better sound.
**7.** See 5.
**8.** Probably, yes.
**9.** Most likely. *Virtua Fighters* would be a prime candidate.

**Sega's Mars upgrade should give the Mega Drive near arcade-standard *Virtua Racing* performance. (See letter from Michael O'Shaugnessy)**

**Q** I own an Amiga 1200 and I've heard that Commodore have shelved their CD add-on drive for the 1200. I am therefore thinking of buying a $CD^{32}$. I use my computer mainly for flight simulations, and I am eagerly awaiting the release of Ocean's *TFX* and *Inferno* games. *TFX* looks amazing on a 486 33MHz PC, but will it look as fast or as smooth on the $CD^{32}$? I've been told it will not. If this is the case, would I be able to fit an accelerator board with extra Fast RAM into the $CD^{32}$'s expansion slot, and would it make a worthwhile difference in terms of speed? Or can the $CD^{32}$ simply not compete with the PC for games of this type? If an accelerator is worthwhile, please could you advise me on the type of accelerator to buy in terms of speed and price. By the way, your magazine is great.

**Gary Clulow, Cumbria**

**A** The CD drive has not been shelved; it will be out later this year. Technically, there's no reason why the $CD^{32}$ couldn't have an A1200-type accelerator board fitted. An accelerator would bring the machine's performance closer to what's possible on a fast PC, and polygon games would certainly benefit. However, from a development perspective it would be problematic – getting widespread support for upgraded hardware is never easy. Extra Fast RAM might be included on one of the proposed thirdparty expansion boards, but again, who's going to take advantage of it if it isn't adopted as standard?

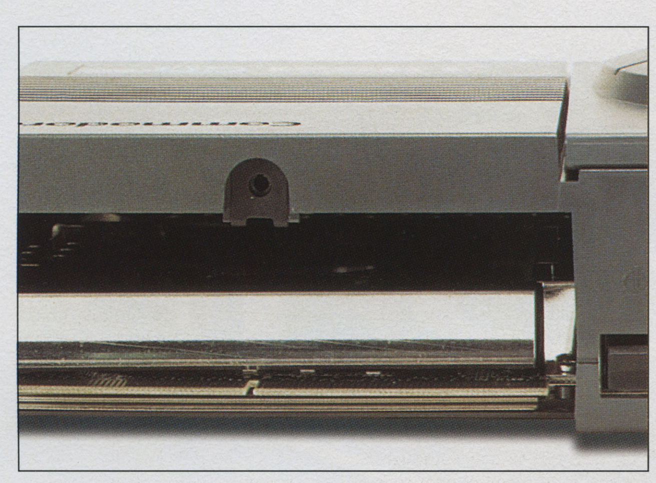


**$CD^{32}$ *Inferno* is unlikely to be as fast as its PC predecessor**

**Q** **1.** You say that the UK Jaguar is slightly slower than the US one because it has to print more lines onscreen. Does this mean that it has a higher resolution?
**2.** What connections should be used to get the best output, both audio and visual?
**3.** Will the UK CD-ROM drive be compatible with a US machine? If not, will UK CDs be compatible with a US CD drive like the carts?

**Andrew Cooke, Wokingham**

**A** **1.** Yes, slightly, but the UK Jaguar is slower because, like all UK consoles, it's been configured to run at 50Hz instead of 60Hz (to match the PAL TV standard). Fortunately, Atari's licensees are encouraged to optimise PAL games: by programming UK



**Souped up CD³²: will an accelerator card ever be available for the CD³²'s expansion port? (See letter from Gary Clulow)**

games to run faster, the 17% speed difference can be compensated for. However, a fullscreen PAL display (more lines than NTSC) often means a slight trade-off in speed. For example, *Cybermorph* runs 3-4% slower than on a US machine.
**2.** S-VHS provides good output, but RGB SCART picture will always provide a better picture.
**3.** CDs should be compatible and will probably work just like cartridges – that is, they will be programmed to detect both NTSC and PAL systems.

**Q** **1.** How many pixels can the Commodore CD32 handle per second?
**2.** How many polygons can the CD32 handle per second?
**3.** Can good conversions of games like *SFII* be done on CD32?
**4.** What is best, CD32 or 3DO?
**5.** Can the CD32 do 3D rendering and bitmapping like other machines?
**6.** Is *Rise Of The Robots* on CD32 as good as the PC version?
**7.** When will *Guardian* (*Sibwing*) be coming out on CD32?

**Ben Goodson, Surrey**

**A** **1.** It varies. For instance, while the machine might be able to chuck around 4 million black-and-white pixels every second, it would only be able to manage something like 2-3,000 pixels with texture-mapped 256-colour graphics.
**2.** Without being pushed, the CD32 can move about 1,000 polygons a second (10x10 pixel triangles). This means about 100 a frame for a frame rate of 10fps.
**3.** Yes, with good programming (and the Amiga has no shortage of decent coders) it should be possible to create good sprite-based games like *SFII*. The CD32's sprite handling is superior to the A500's, although it can't offer the sheer number of sprites that machines like the SNES and Mega Drive can.
**4.** Technically, 3DO wipes the floor with CD32 in most areas, although Panasonic's machine suffers from a rather slow CD drive. Software is the key issue, obviously: so far we've seen little on CD32 that can match titles like *Road Rash*, *Crash 'n' Burn*, *Total Eclipse* and *John Madden*.
**5.** It can handle rendered graphics, but the actual rendering of ingame images takes place during development using PCs or Silicon Graphics machines.
**6.** It has the potential to be far better – the PC is notoriously slow at coping with sprite-based games. Remember *SFII*?
**7.** A couple of months.

**Q** I have some questions on the Sony PS-X, as I am interested in buying one as soon as it hits the shelves in the UK.
**1.** Will the system have a link option for multiplayer games?
**2.** How will the software be priced, eg *Ridge Racer*?
**3.** Is there a set price for the Sony PS-X?
**4.** When will it be released?
**5.** Will there be a special games pack released with this machine?
**6.** Do you have any idea what other software is on its way?

**Kevin Archibald, Scotland**

**A** **1.** Japanese licensees have hinted that multiplayer games are going to be a big part of PS-X. Perhaps we'll see a link-up or splitscreen version of *Ridge Racer*.
**2.** Cheaper than current console software, certainly. In a recent interview, Sony Computer Entertainment boss Akira Sato said that software would come in at around ¥5-7000 (£30-40).
**3.** No, but rumour has it that the PS-X will be priced very competitively. The figure being touted by some Japanese pundits is ¥30,000 (£200), but Sony are giving nothing away except that it will be 'less than ¥50,000'.
**4.** November in Japan; September '95 in the UK and US.
**5.** Possibly, but the Japanese tend to let consumers choose their own games.
**6.** Apart from *Street Fighter II* from Capcom, *Ridge Racer* from Namco, and *Legend* and *Spring Man* (a 3D platform game) from Sony, nothing's been announced. But rest assured, it will all become clear soon.



**This parallax tunnel sequence from *Super Stardust* shows what a bit of decent coding can produce on the CD³². (See letter from Ben Goodson)**

**Q** **1.** I've heard that the Atari Jaguar can run most games as well as a DX2 PC, but could it handle a game like, say, *TFX*?
**2.** Is it possible that *TFX* will come out on Jaguar?
**3.** Will the CD-ROM include the MPEG chip for FMV?
**4.** How much RAM does the Jaguar have?
**5.** Is the Jaguar more powerful than the CD32?
**6.** About the 3DO: I can buy an import machine now, but will this run UK games later or will I need an adaptor?

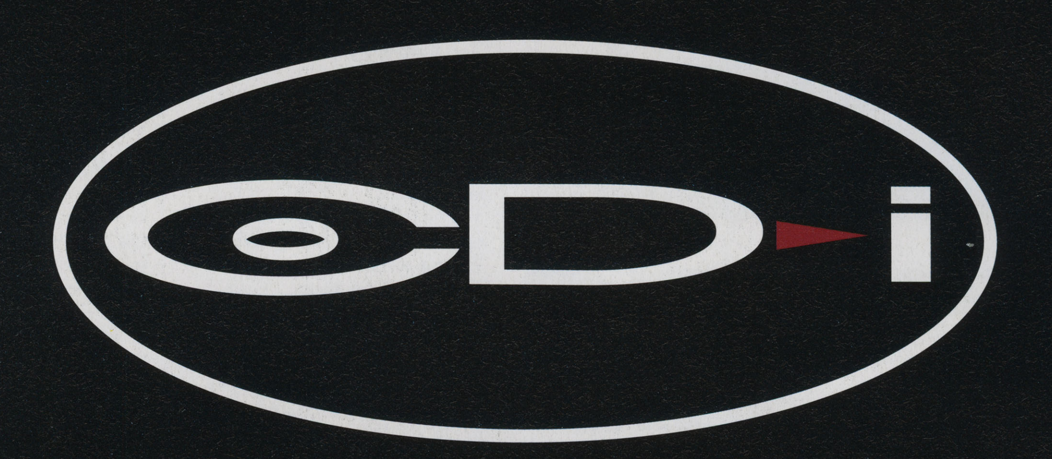
**Roy Bell, London**

**A** **1.** *TFX* would probably work wonderfully on the Jaguar because it doesn't rely on texture mapping. Flat shaded polygons are the Jaguar's forte, and there's no reason why the performance of a DX2 couldn't be matched.
**2.** Ocean have no plans, but they would be well advised to consider it – as well as DID's other game, *Inferno*.
**3.** No, CinePak software FMV is used, but the results are better than the 3DO's CinePak demos.
**4.** Two megabytes (16 megabits).
**5.** Yes.
**6.** 3DO will not suffer from compatibility problems between countries. However, when native UK PAL games, whose display is made up of 625 lines, are run on an NTSC system (525 lines), part of the picture will inevitably be missing.

## Q and A

You can rely on Edge to cut through the technobabble and give you straight answers. Write to: Q&A, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW, You can fax us on 0225 338236, or e-mail us via future@cix.compulink.co.uk. with a subject line 'ATTN: Jason Brookes'. Sorry, but we cannot answer any questions personally, either over the phone or by post.

## Next month



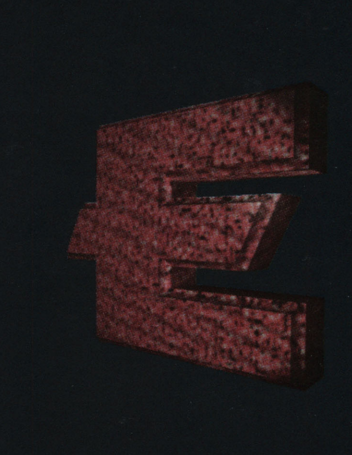



Long before Trip Hawkins succeeded in getting investors eating out of his hand, Philips had already tried to tie up the home entertainment market with the CD-i standard. Next issue, Edge takes a long overdue look at Compact Disc Interactive – and at its chequered history since its creation in the late Eighties. And as the CD-i coffin gets dusted down again, Edge asks whether the system has any kind of future – or is it set to remain in the 'no-mans land' of interactive entertainment?

**EDGE 11**

Thursday 30 June

continued Edge 11






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